


HCD-H66/H70/H77/H1200/H1400

SERVICE MANUAL

HCD-H66, HCD-H70, HCD-H77, HCD-H1200 and HCD-H1400 are the tuner, deck, CD and amplifier section in FH-B66CD, FH-B70CD, FH-B77CD, MHC-1200 and MHC-1400 respectively.

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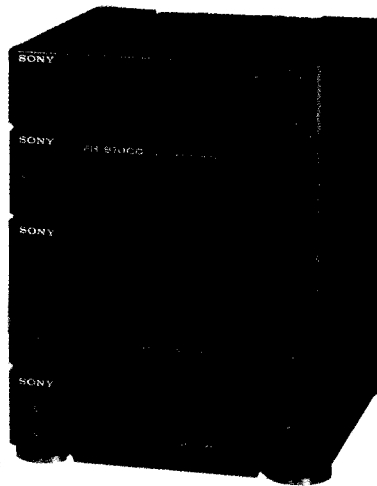


PHOTO: HCD-H70

AEP Model

HCD-H66
HCD-H77
HCD-H1200
HCD-H1400

UK Model

HCD-H1200

E Model

Australian Model

HCD-H70



SPECIFICATIONS

Tuner Section

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5–108MHz
Antenna	Telescopic antenna (HCD-H66/H70/H77) FM lead antenna (HCD-H1200/H1400)
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7MHz
AM tuner section	
Tuning range	For AEP, UK, G model MW: 531–1,602kHz LW: 153–279kHz For IT model MW: 522–1,611kHz LW: 144–288kHz For E, EA, AUS model MW: 531–1,602kHz SW: 5.95–17.9MHz
Antenna	AM loop antenna, External antenna terminals
Intermediate frequency	450kHz

Amplifier Section

Continuous RMS power output	20+20 watts (6 ohms at 1kHz, 5% THD) (HCD-H66/H1200) 30+30 watts (6 ohms at 1kHz, 5% THD) (HCD-H70/H77/H1400)
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CD Section	Model Name Using Similar Mechanism		HCD-H7/H1500
	CD Mechanism Name		CDM13A-5BD3
	Base Unit Name		BU-5BD3
DECK Section	Model Name Using Similar Mechanism		HCD-H7/H1500
	Tape Transport Mechanism Type	DECK A	TCM-170RA1
		DECK B	TCM-170RB7

Peak music power output (for HCD-H70)	280 watts (6 ohms)
Inputs	MIX MIC (minijack) : sensitivity 1mV, impedance 600 ohms For HCD-H66/H77/ H1200/H1400 PHONO (phono jacks): sensitivity 5 mV, impedance 47 kilohms For HCD-H70 VIDEO/AUX (phono jacks): sensitivity 450mV, impedance 50 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more. SPEAKER: accepts speakers of 6 to 16 ohms.

— continued on next page —



COMPACT DISC DECK RECEIVER

SONY®

Compact Disc Player Section

System	Compact disc digital audio system
Laser	Semiconductor laser ($\lambda = 780\text{nm}$) Emission duration : continuous
Laser output	Max. $44.6\mu\text{W}^*$ *This output is the value measured at distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

Cassette Deck Section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	40–13,000Hz ($\pm 3\text{dB}$), using TYPE I cassette (Sony HF-S) 40–14,000Hz ($\pm 3\text{dB}$), using TYPE II cassette
Wow and flutter	0.1% WRMS $\pm 0.3\%$ (DIN)

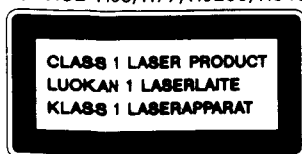
General

Power requirements	AEP model 220–230V AC, 50/60Hz UK model: 240V AC, 50Hz G, IT model: 220–230V AC, 50Hz E, EA, AUS model: 110–120V or 220–240V AC adjustable, 50/60Hz
Power consumption	Except for UK model : 90 watts UK model: 160 watts
Dimensions	Approx. $615 \times 285 \times 260\text{mm}$ (w/h/d) ($24\frac{1}{4} \times 11\frac{1}{4} \times 10\frac{1}{4}$ inches) incl. projecting parts and controls
Weight	Approx. 11.6kg (25 lb 9 oz)
Supplied accessories	Remote commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM lead antenna (1) (HCD-H1200/H1400)

Design and specifications subject to change without notice.

Note: G : Germany model
IT : Italian model
EA : Saudi Arabia model
AUS: Australian model

For HCD-H66/H77/H1200/H1400



This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

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SAFETY-RELATED COMPONENT WARNING!!

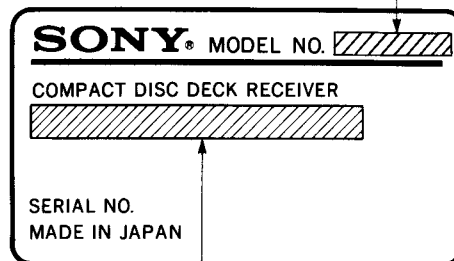
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTARY PUBLISHED BY SONY.

SECTION 1 SERVICING NOTES

MODEL IDENTIFICATION

— Specification Labels —

IT model: FH-B66CD
 IT model: FH-B77CD
 AEP, G model: HCD-H66
 E, EA, AUS model: HCD-H70
 AEP, G model: HCD-H77
 AEP, UK model: HCD-H1200
 AEP model: HCD-H1400



AEP model: AC: 220–230V~50/60Hz
 UK model: AC: 240V~50Hz
 G, IT model: AC: 220–230V~50Hz
 E, EA, AUS model: AC: 110–120/220–240V~50/60Hz 90W

On operating voltage

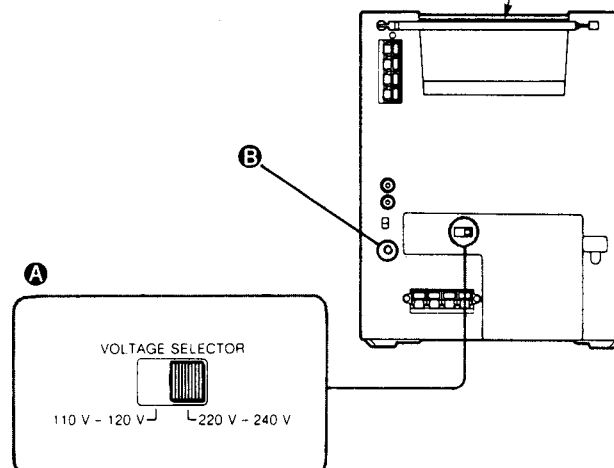
Before operating the stereo system, check that the operating voltage of your system is identical with the voltage of your local power supply. **A**

AEP model	220–230V AC, 50/60Hz
UK model	240V AC, 50Hz
G, IT model	220–230V AC, 50Hz
E, EA, AUS model	110–120, 220–240V AC adjustable, 50/60Hz

On operation

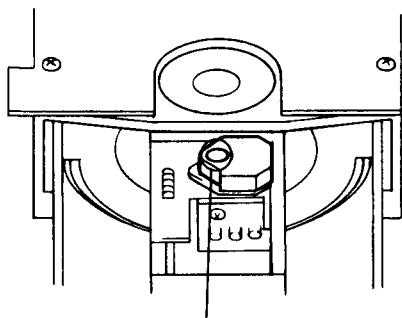
- If the system do not operate due to power noise, press the system reset button at the rear. The system will resume operation. **B**
 At this time, the system returns to the factory-set mode. Please set the clock, timer, or store stations again.

Telescopic antenna:
 Use on HCD-H66/H70/H77.



LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

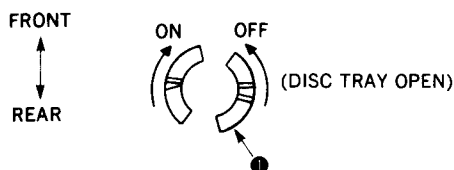
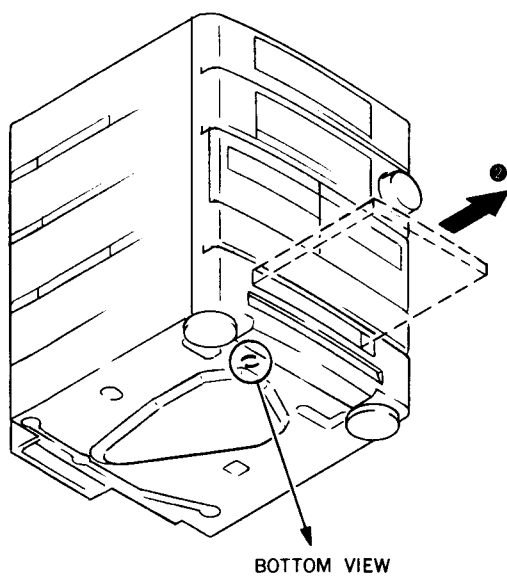
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



- (1) Insert to ① for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)
- (2) Tray as come out little of front panel, pull out in the direction of arrow ② by hand.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties

- Material: GaAlAs
 - Wavelength: 780 nm
 - Emission Duration: continuous
 - Laser Output Power: less than 44.6 μ W*
- * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-dioe data

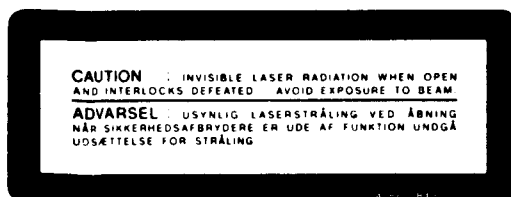
- Materiale: GaAlAs
 - Bølgelængde: 780 nm
 - Udstråling: Kontinuerlig
 - Laseroutput: Max. 0,4 mW*
- * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
- Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning

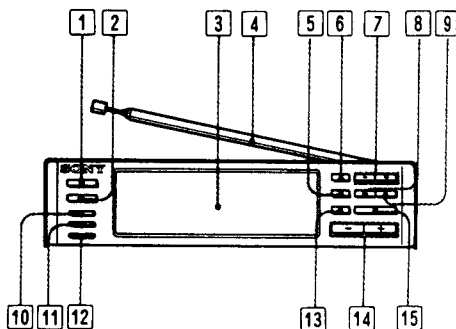


VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkyvätöntä) silmille vaarallista lasersäteilyä.

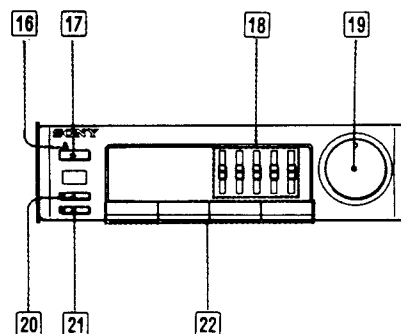
2-1. PARTS IDENTIFICATIONS

Tuner Section **A**

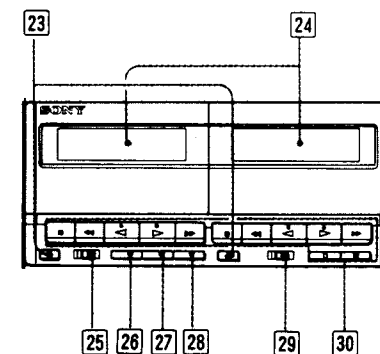
- 1 TIMER CONTROL button
- 2 SLEEP timer button
- 3 Display window
- 4 Telescopic antenna (HCD-H66/H70/H77)
- 5 AUTO tuning button
- 6 BAND selector
- 7 TUNING +/- buttons
- 8 MEMORY button
- 9 ENTER button
- 10 TIMER SET button
- 11 CLOCK DISPLAY button
- 12 CLOCK SET button
- 13 NEXT button
- 14 PRESET/TIMER +/- (preset station scan/time set) buttons
- 15 SHIFT (memory page select) button

Amplifier Section **B**

- 16 STANDBY indicator
It is lit as long as the AC power cord is connected to a wall outlet.
- 17 POWER switch
- 18 5-band stereo graphic equalizer and spectrum analyzer
- 19 VOLUME control
- 20 DBFB (Dynamic Bass Feedback) button
- 21 S-SUR (simulated surround) effect button
- 22 Function selectors

Cassette Deck Section **C**

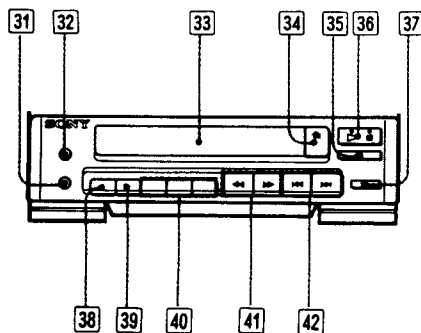
- 23 EJECT button
- 24 Cassette holders
- 25 DIRECTION MODE selector
- 26 AMS/BLK SKIP (Automatic Music Sensor/blank skip) button
- 27 TAPE DUBBING HIGH SPEED button
- 28 CD SYNCHRO (CD synchronized recording) button
- 29 DOLBY NR (Dolby Noise Reduction) switch
- 30 Tape operation buttons
 ◀▶: Fast winding
 ▷: Forward play
 ◁: Reverse play
 ■: Stop
 REC (recording)
 PAUSE

SECTION 2
GENERAL

This section is extracted from instruction manual.

CD Player Section D

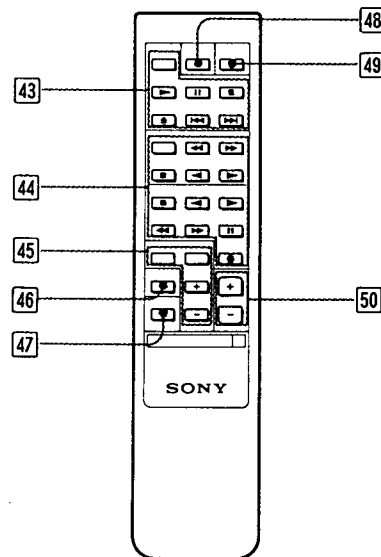
- 31 HEADPHONES jack (stereo minijack)
- 32 MIX MIC (mixing microphone) jack (minijack)
- 33 Disc compartment
- 34 ▲ OPEN/CLOSE button
- 35 ■ (stop) button
- 36 ▷|| (play/pause) button and indicator
- 37 EDIT button
- 38 TIME display selector
- 39 REPEAT button
- 40 PLAY MODE selectors
CONTINUE play button
SHUFFLE play button
PROGRAM play button
- 41 ◀◀ / ▶▶ (manual search) buttons
- 42 ◀◀ / ▶▶ (Automatic Music Sensor) buttons



Remote Commander E

(HCD-H66/H1200)

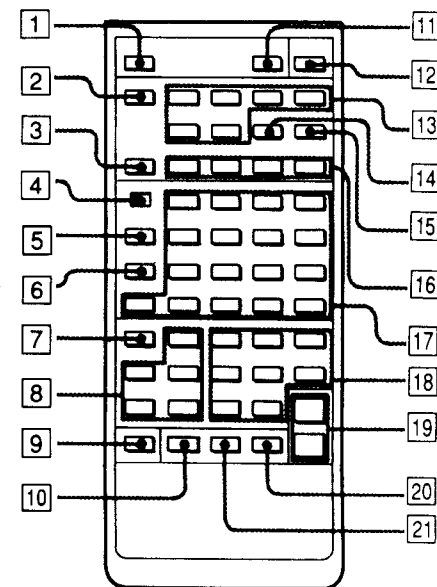
- 43 CD player operation buttons
- 44 Cassette deck operation buttons
- 45 Tuner operation buttons
- 46 PHONO select button
- 47 VIDEO/AUX select button
- 48 SLEEP timer button
- 49 POWER switch
- 50 VOL (volume) +/- control buttons



Remote Commander F

(HCD-H70/H77/H1400)

- 1 CLOCK DISPLAY button
- 2 CD player select button
- 3 TIME display selector
- 4 CD/TUNER numeric button function selector
- 5 TUNER select button
- 6 SHIFT button
- 7 TAPE (cassette deck) select button
- 8 Cassette deck operation buttons (deck A)
- 9 VIDEO (VIDEO/AUX) select button
- 10 PHONO select button
- 11 SLEEP timer button
- 12 POWER switch
- 13 CD player operation buttons
- 14 CHECK button
- 15 CLEAR button
- 16 CD play mode selectors
- 17 CD/TUNER numeric button
- 18 Cassette deck operation buttons (deck B)
- 19 VOL (volume) +/- controls
- 20 DBFB (Dynamic Bass Feedback) button
- 21 SURROUND (simulated surround) button



2-2. TUNER SECTION

Clock Setting

Setting the Clock

Example: Set to 9:25 in the morning.

When the AC power cord is connected, the display shows:

0:00 for HCD-H66/H77/H1200/H1400
AM 0:00 for HCD-H70.

- 1 Press **CLOCK SET**.
- 2 Set the hour with **PRESET/TIMER +/-** buttons
- 3 Press **NEXT**.
- 4 Set the minute with **PRESET/TIMER +/-** buttons.
- 5 Press **NEXT**.
The clock starts operating.

Information on the time

HCD-H66/H77/H1200/H1400 shows the time in 24-hour cycle.

HCD-H70 shows the time in 12-hour cycle.

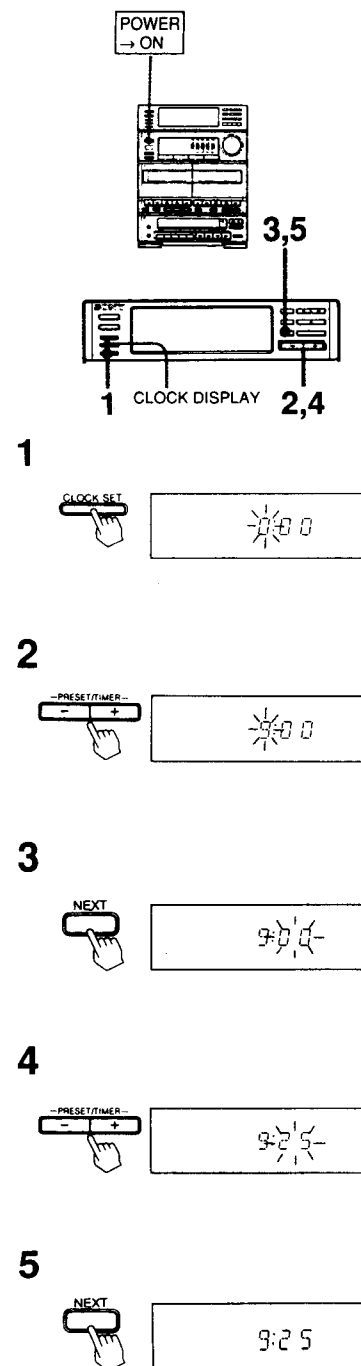
When a power interruption occurs

The power is backed up for approximately 1 day. If the power is recovered within 1 day, there is no need to reset the clock and timer. If it is longer than 5 minutes, both the clock and timer settings are erased, and "0:00" will flash on the display.

To check the present time while using the system

Press **CLOCK DISPLAY**.

The time display disappears after a few seconds.



Radio

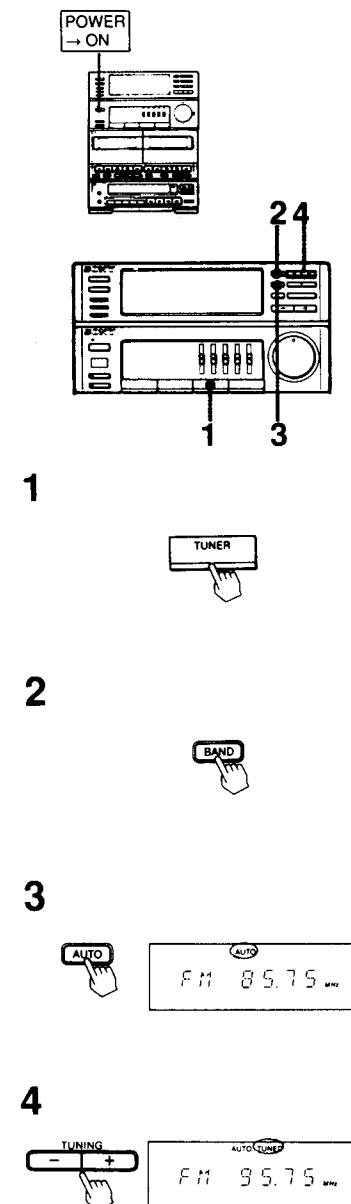
The automatic tuning allows you to receive stations whose signal is strong enough. When the signal is too weak, use the manual tuning.

Tuning in Automatically

- 1 Press **TUNER**.
- 2 Press **BAND** repeatedly until the desired band appears.
As you press **BAND**, the band changes as follows:
HCD-H66/H77/H1200/H1400 :
FM → MW → LW
HCD-H70 :
FM → SW → MW
- 3 Press **AUTO**.
Make sure that **AUTO** appears in the display.
- 4 Select the station with **TUNING +** or **-**.

Tuning in Manually

- 1 Press **TUNER**.
- 2 Select band by pressing **BAND**.
- 3 Press **AUTO** so that **AUTO** disappears from the display.
- 4 Select the station with **TUNING +** or **-**.



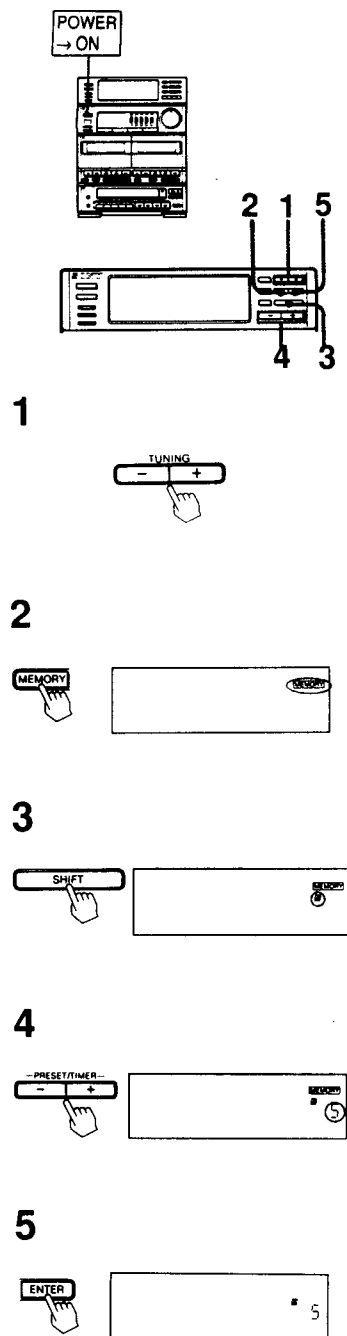
A total of 30 stations can be stored in any desired sequence, so that you can tune in the stored station directly by entering the memory page and number.

Storing Stations

- 1 Tune in the desired station.
- 2 Press **MEMORY**.
MEMORY appears for several second.
- 3 While **MEMORY** is on, press **SHIFT** to select the memory page (A, B or C).
The memory pages (A, B or C) can be classified according to the music category, station band, etc.
- 4 While **MEMORY** is on, press **PRESET/TIMER + or -** to select the number (1 to 10).
- 5 Press **ENTER**.
MEMORY disappears, and the station is stored.
- 6 Repeat 1 to 5 for each stations to be stored.

If you cannot store a station successfully
Press **MEMORY** again so that **MEMORY** appears, and then proceed with the steps 3 to 5 above.
Be sure to operate while **MEMORY** is on (approx. 4 seconds.)

When you have selected the wrong page and number
Press **MEMORY** and then proceed with the above steps.



To Tune in a Preset Station

- 1 Press **SHIFT** to select the memory page.
- 2 Press **PRESET/TIMER + or -** to select the desired number.

To select the number directly (remote commander only) A (HCD-H70/H77/H1400)

- 1 Set the CD/TUNER selector to TUNER.

- 2 Press **SHIFT** and the numeric button.

Indicator on the display

TUNED: Appears when a station of sufficient signal strength is tuned in.

STEREO: Appears when an FM stereo program of sufficient signal strength is received.

Antenna adjustment B

For FM reception, adjust the length and direction of the telescopic antenna (HCD-H66/H70/H77)

For MW, LW, and SW reception, find the best location of the AM loop antenna.

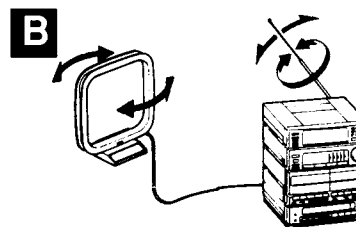
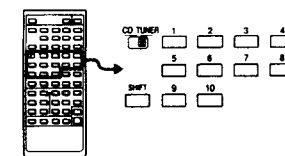
Can a previously stored station be erased?

No. Erasing only is not possible, but storing a new station erases the previous one.

Important

The stored stations remain for approximately 1 week even if no power is supplied (e.g. the power cord is disconnected, etc.). If they are erased, store the stations again.

A (HCD-H70/H77/H1400)



2-3. AMPLIFIER SECTION

Audio Adjustment

Volume Adjustment

Turn VOLUME **A** clockwise to increase the sound level, or counterclockwise to decrease it.
(Or press VOL + or - on the supplied remote commander.) (HCD-H70/H77/H1400)

Sound Quality Adjustment

To reinforce bass

Press DBFB **B**
The lower the sound level is, the more the bass is emphasized.

To adjust sound quality to your preference

Adjust the graphic equalizer controls **C**

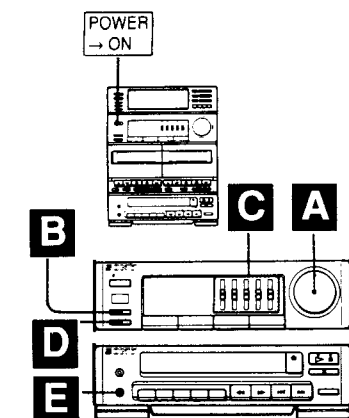
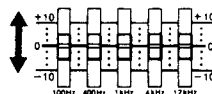
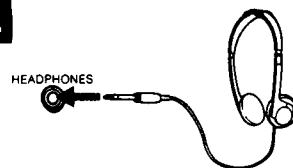
- 100 Hz: Boost or cut heavy bass.
- 400 Hz: Adjust the power, spaciousness and warmth of the sound.
- 1 kHz: Increase the presence of vocals.
- 4 kHz: Enhance the brightness of sound, or reduce stridency.
- 12 kHz: Highlight the fine details of instrumental sound.

To activate surround effect for stereo sound

Press S-SUR (simulated surround) **D** during a stereo sound reproduction. This creates the atmosphere of a movie theater or concert hall.
This function is not effective for a monaural sound.

For personal listening

Connect headphones to HEADPHONES **E**.
No sound comes from the speakers.

**A****B****C****D****E**

2-4. CD SECTION

Disc Playing

Playing the Entire Disc

- 1 Press CD.
- 2 Press \blacktriangle OPEN/CLOSE to open the tray.
- 3 Place the disc with the printed side up.
- 4 Press $\triangleright \parallel$.
The tray closes and play starts.
The display shows **A** the track number, **B** elapsed playing time of the track and **C** track numbers.

Caution on adjusting volume

Do not turn up the volume while listening to the portion with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.

To stop play

Press \blacksquare .

To stop for a moment during play

Press $\triangleright \parallel$. \parallel appears in the display.
To resume play, press it again.

To stop play and open the tray

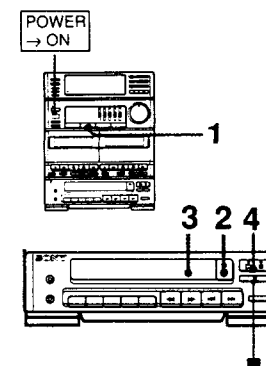
Press \blacktriangle OPEN/CLOSE.

To play an 8 cm (3-inch) CD

Place it on the inner circle of the tray. If the disc is provided with an adaptor, first remove it. Do not put a normal CD (12 cm/ 5-inch) on top of an 8 cm (3-inch) CD.

When the TUNER function is selected

The CD player section does not operate.
This prevents interference to radio reception.



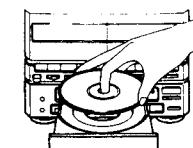
1



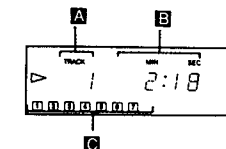
2



3



4



Locating a Particular Selection — Automatic Music Sensor (AMS)

The AMS locates the beginning of a selection.
This function works during play or pause.

To locate the beginning of the current or preceding selection **A-1**

Press **⏮** as many times as required.
Keep **⏮** pressed to skip selection.

To locate the beginning of a succeeding selection **A-2**

Press **⏭** as many times as required.
Keep **⏭** pressed to skip selection.

Locating a selection directly (remote commander only) (HCD-H70/H77/H1400)

You can locate a selection directly using the supplied remote commander.

- 1 Set the CD/TUNER selector to CD.
- 2 Press the numeric button for the desired selection.

If the selection number is greater than 12.

Use the >12 and 1 to 10 buttons. 10 functions as the figure 0.

e.g. To play from selection No. 22

Press >12, 2, 2.

To play from selection No. 30

Press >12, 3, 10.

Locating a Particular Point in a Selection

You can locate any particular point in the disc during play.

To search while monitoring the sound

To move forward at high speed **D-1**

Keep **⏭** pressed during play and release at the desired point.

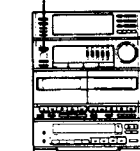
To move backward at high speed **B-2**

Keep **⏮** pressed during play and release at the desired point.

To search quickly

- 1 Press **⏭** to set the unit in pause mode.
- 2 Keep **⏮** or **⏭** pressed.
The search speed increases, but there is no sound. Find the desired point by observing the display.
Press **⏭** again at the desired point.

POWER
→ ON



B **A**

A-1



A-2



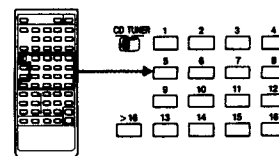
B-1



B-2



(HCD-H70/H77/H1400)



Information display

To change the time display, press TIME during play.

As you press TIME, the display changes to give you the following information.

- A** Elapsed playing time
- B** Remaining time in a selection. If the current selection number is over 20, "----" is displayed.
- C** Remaining time of the disc

When the tray was closed by pressing

⏮ OPEN/CLOSE **D**

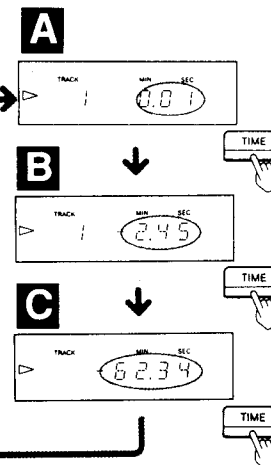
The followings appear for approx. 5 seconds.

- a** Last track number
- b** Total play time of the disc
- c** Track numbers

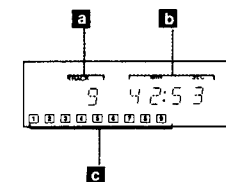
For the discs containing 17 selections or more, up to 16 appear and the rest does not appear.

Notes on handling discs **E**

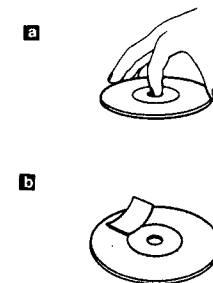
- To keep the disc clean, handle the disc by its edge. Do not touch the surface. **a**
- Do not stick paper or tape on the disc. **b**
- Do not expose the disc to direct sunlight or heat sources such as hot air duct, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature.
- After playing, store the disc in its case.



D



E



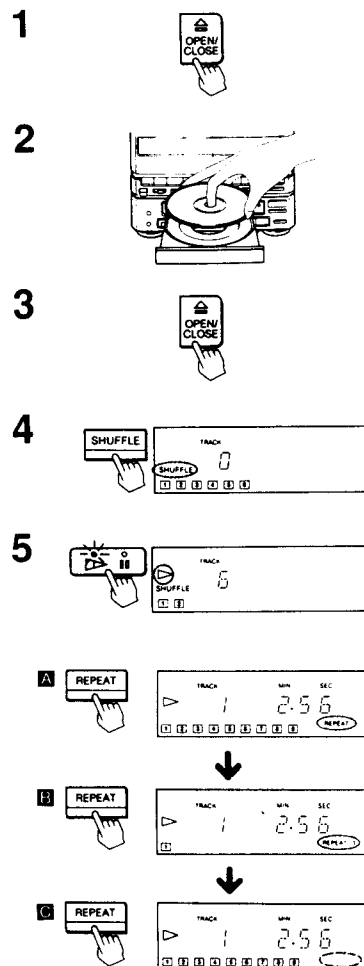
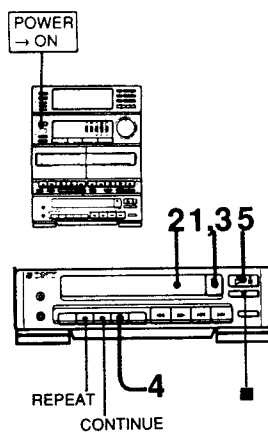
Playing in a Random Order — Shuffle Play

Shuffle play function plays all the selections in a random order.

- 1 Press **△ OPEN/CLOSE** to open the tray.
- 2 Place the disc.
- 3 Press **△ OPEN/CLOSE** to close the tray.
- 4 Press **SHUFFLE**.
SHUFFLE appears.
- 5 Press **▶▶**.

To stop playing
Press **■**.

To cancel shuffle play
Press **CONTINUE**.
SHUFFLE disappears, and play continues in normal play mode.



Playing in a Desired Order — Program Play

(HCD-H66/H1200)

You can make a program for up to 20 selections in the order you want them to be played.

- 1 Insert the disc.
- 2 Press **PROGRAM**.
PGM appears in the display.
- 3 Press **◀◀** or **▶▶** to display the desired selection.
- 4 Press **PROGRAM**.
- 5 Repeat steps 3 and 4 for the desired selections.
 - A** Last programmed selection
 - B** Total playing time of selections
 - C** Programmed selection numbers
- 6 Press **▶▶**.

To stop playing

Press **■**.

To restart the same program play,
press **▶▶**.

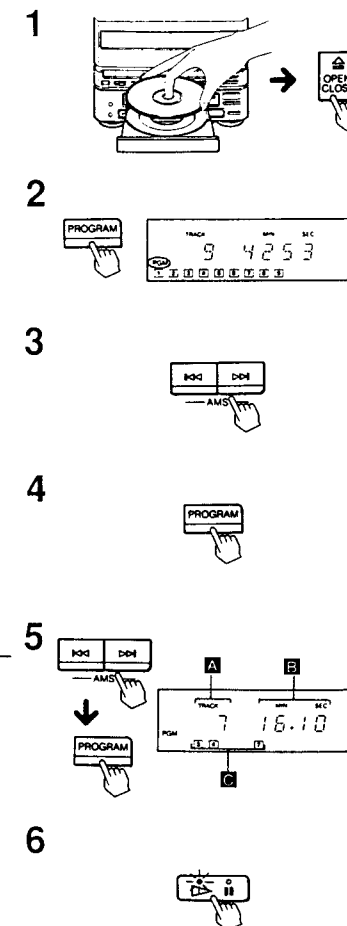
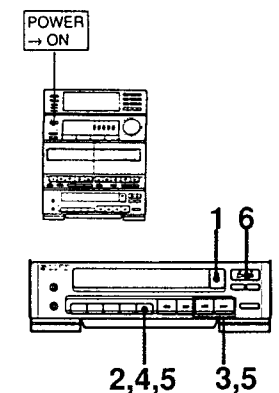
To resume normal play

Press **CONTINUE**.

The program is erased and the play continues in the normal play mode.

If "----" is displayed

- You have programmed a selection number over 20.
- The total time has exceeded 100 minutes.



Playing in a Desired Order — Program Play

(HCD-H70/H77/H1400)

You can make a program for up to 20 selections in the order you want them to be played.

- 1 Insert the disc.
- 2 Press **PROGRAM**.
PGM appears in the display.
- 3 Press the numeric buttons for the desired selection in the desired order to be programmed.
 - A Last programmed selection
 - B Total playing time of selections
 - C Programmed selection numbers
- 4 Press ►.

To stop playing

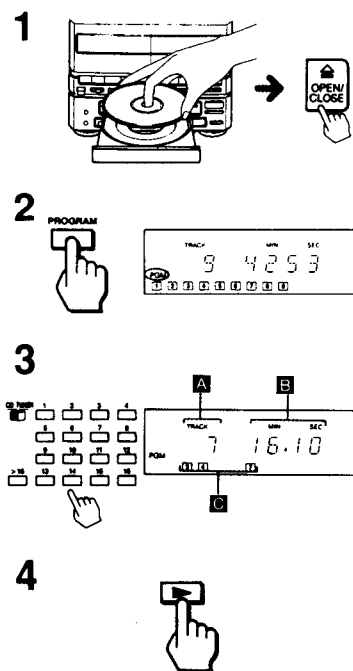
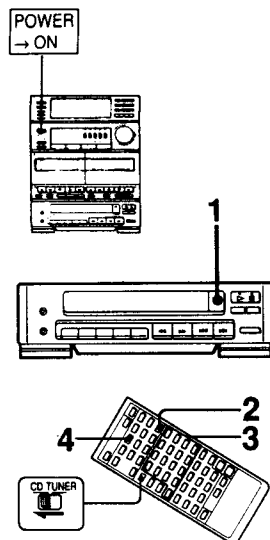
Press ■.
To restart the same program play, press ►.

To resume normal play

Press **CONTINUE**.
The program is erased and the play continues in the normal play mode.

If "—" is displayed

- You have programmed a selection number over 20.
- The total time has exceeded 100 minutes.



To check your program (HCD-H70/H77/H1400)

(Remote commander only)

Press **CHECK** on the remote commander

As you press it, the track numbers appear in the order in which they are programmed. At the last selection, "End" appears in the display window.

To add a selection to the end of the program

Follow the same procedures as "Playing in a Desired Order" while the unit is in the stop mode.

You cannot add selections during play.

To erase the entire program

Press ■ once during stop; twice during play.
The program is also erased when you press ▲ to open the tray or turn off the system.

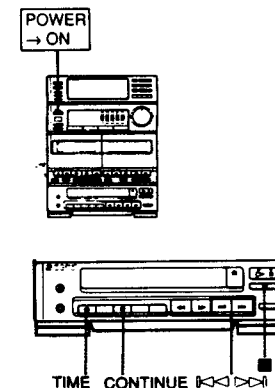
To erase a particular selection in the program (HCD-H70/H77/H1400)

(Remote commander only)

- 1 Press **CHECK** to display the track number to be erased.
- 2 Press **CLEAR**.

To check the remaining time

Press **TIME** once to see the remaining time of the selection being played; twice to see the total remaining time of the programmed selections; once more to return to the initial display.



2-5. DECK SECTION

Tape Playback

Playback Operation


1 Press TAPE.


TAPE appears in the display.

2 Insert the tape.

3 Press < (for reverse side playback) or > (for front side playback).

How to select the DIRECTION MODE position

To playback one side: Select .

To playback both sides: Select .

The DIRECTION MODE setting is effective for both decks.

To stop playback

Press .

Playing Back Automatically after Fast Winding – Auto Play

This function starts playback automatically from the beginning of the side after fast winding.

To start playback from the beginning of the front side:

press > while keeping <<< pressed

To start playback from the beginning of the reverse side:


press < while keeping >>> pressed.

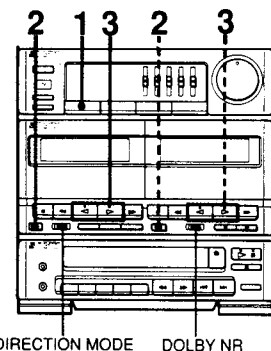
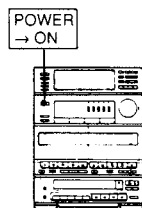
When listening to the cassette recorded with Dolby noise reduction system*

Set the DOLBY NR switch to ON.

What is the Dolby NR system?

Dolby NR (noise reduction) system reduces tape hiss noise in low-level high-frequency signals. The system boosts these signals in recording and lowers them in playback.

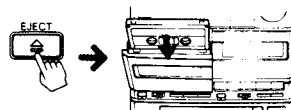
* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.



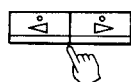
1



2

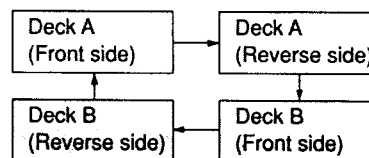


3



Playing Both Decks in Succession – Relay Play

Relay play always follows the sequence below regardless of where playback starts. When playback of the reverse side of the tape in deck B is completed, the following sequence continues 4 more times.




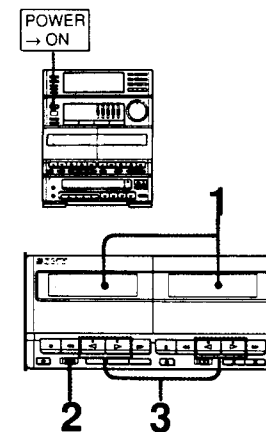
1 Insert recorded cassettes in both decks.

2 Set DIRECTION MODE to RELAY.

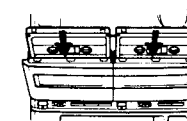
3 Press > or < on deck A or deck B.

To stop relay play

Press  of the deck playing.



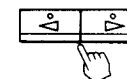
1



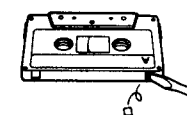
2



3



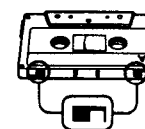
A



B



C



Notes on Cassettes

To protect recording A

Break out the tab on the left shoulder of the cassette side of which recording is to be protected.

To re-record the cassette B

Cover each slot with plastic tape.

When using a TYPE II (CrO₂) cassette, be careful not to cover the detector slots which are necessary for automatic tape type detection.

C

Locating the Beginning of a Selection during Playback – Automatic Music Sensor (AMS)

The AMS locates the beginning of a selection by detecting the blank spaces between selections. To assure correct operation of the AMS, there must be a blank of 4 seconds or longer between selections.

- 1 Press \triangleright or \triangleleft to start playback.
- 2 Press AMS/BLK SKIP to illuminate its indicator.
- 3 Press \gg or \ll referring to the following table.

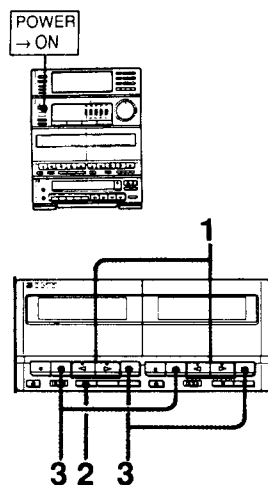
Direction indicator	Side of the cassette being played	Desired selection	
		Next selection	Selection being played
	Front side	\gg	\triangleleft
	Reverse side	\triangleleft	\gg

Skipping a Blank

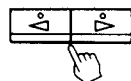
The deck automatically goes into the fast winding mode when it detects a blank of about 10 seconds or more. Playback resumes when a new selection begins.

Press AMS/BLK SKIP to illuminate its indicator. **A**

To cancel the blank skip function
Press AMS/BLK SKIP again so that the indicator goes off.



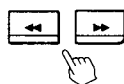
1



2



3



A



Recording (Deck B)

Recording Operation

Use only TYPE I (normal) or TYPE II (CrO₂) tapes for recording.

- 1 Insert the tape.
- 2 Select program source with the function selectors and play it. The display shows the selected program source.
- 3 Set DIRECTION MODE. To record one side, set to \equiv . To record both sides, set to \curvearrowright .
- 4 Set DOLBY NR. To use the Dolby NR system, set to ON. Otherwise, set to OFF.
- 5 While keeping REC pressed, press \triangleright (for front side recording) or \triangleleft (for reverse side recording). Recording starts.

To stop recording
Press \blacksquare .

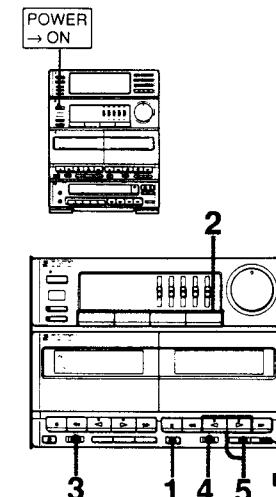
Notes

- Even if you set DIRECTION MODE to \curvearrowright , recording stops at the end of the reverse side. To record both sides, be sure to start with the front side.
- Graphic equalizer controls are not effective for recording.
- The recording level is fixed and cannot be adjusted manually.

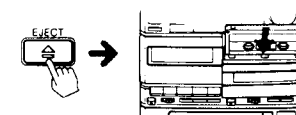
How to start recording precisely

- 1 Press PAUSE after step 4 in "Recording Operation" above.
- 2 While keeping REC pressed, press \triangleright or \triangleleft .
- 3 Press PAUSE again at the desired point.

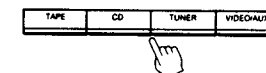
If whistling noise is heard during recording MW and LW recording (HCD-H66/H77/H1200/H1400) Slide the ISS (Interference Suppress Switch) at the rear to the position depending on which best reduces the noise.



1



2



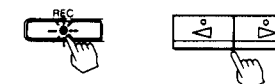
3



4



5



CD Recording (Deck B)

CD Recording Operation

- 1 Insert a blank tape in deck B.
- 2 Set **DIRECTION MODE**.
To record one side, set to \Rightarrow .
To record both sides, set to $\Rightarrow \Leftarrow$.
- 3 Set **DOLBY NR**.
To use the Dolby NR system, set to ON.
Otherwise, set to OFF.
- 4 Press **CD** of the function selector.
- 5 Place the disc with the printed side up, and close the tray.
- 6 Press **CD SYNCHRO**.
CD SYNC appears in the display.
The CD player and cassette deck are set in pause mode.

Note

The front side is automatically selected to be recorded in. To record in the reverse side, press \Leftarrow .

- 7 Press **PAUSE** of the cassette deck.
The CD play and recording start simultaneously.

Note

When the tab on the cassette has been removed, the CD SYNCHRO button does not operate.

Is it possible to listen to program sources other than CD during CD recording?

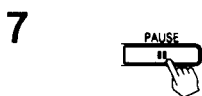
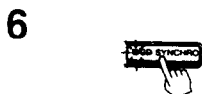
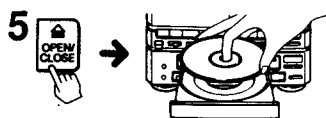
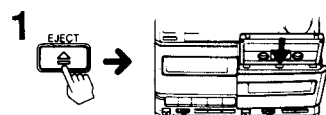
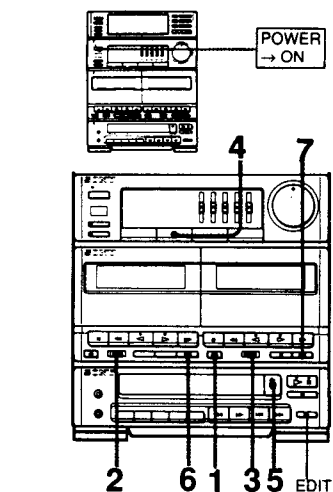
No. If you press another function selector, the CD play stops and the program of the pressed button will be recorded.

Blanks between selections during CD recording

A 3-second blank is automatically inserted between selections.

Is it possible to adjust the sound quality for CD recording?

No. The graphic equalizer does not work.



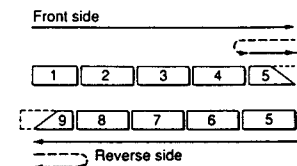
(HCD-H66/H1200)

If the tape ends in the middle of a selection **A**

The tape is rewound to the beginning of the selection. Then the selection is re-recorded so that it fades out naturally at the end of the tape.

If the recording is to be continued to the reverse side, the selection that faded out on the front side is recorded from its beginning on the reverse side.

A



To record only desired selections

Before pressing CD SYNCHRO, program the desired selections. (See page 36.)

To program for both sides continuously, insert a pause section between the selections for side A and those for side B.

- 1 Program the selections for side A.
- 2 Press \square for CD operation on the remote commander.
The total play time will be reset to 0.
- 3 Program the selections for side B.
- 4 Press CD SYNCHRO.
- 5 Press PAUSE on the cassette deck.
Recording starts.

When the CD play of side A ends, the CD player enters pause mode. When the tape comes to the beginning of side B, the CD play of side B starts and the recording starts automatically.

Important

- Total playing time of the program of each side must be within the length of each side of the tape.
- Up to 20th selection in the disc can be programmed. 21st selection cannot be programmed.

(HCD-H70/H77/H1400)

If the tape ends in the middle of a selection **A**

The tape is rewound to the beginning of the selection. Then the selection is re-recorded so that it fades out naturally at the end of the tape.

If the recording is to be continued to the reverse side, the selection that faded out on the front side is recorded from its beginning on the reverse side.

Programming selections while checking the total playing time – Program Edit

You can adjust the total playing time to the tape duration.

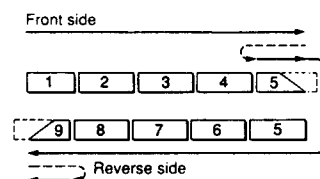
- 1 Press **PROGRAM**.
"PGM" appears in the display.
- 2 Choose the desired selection to be programmed with **◀◀** or **▶▶** and check the time.
- 3 If satisfactory, go to the next step.
If not, repeat step 2 and choose another selection.
- 4 Press **PROGRAM**.
- 5 Repeat steps 2 to 4 to program the desired selections for side A.
"A" remains lit.
- 6 Press **II** on the remote commander.
"P" appears in the display and the total playing time is reset to 0. "B" lights up.
- 7 Repeat steps 2 to 4 to program the desired selections for side B.
- 8 Press **CD SYNCHRO** and **PAUSE** on the cassette deck.
The CD play and recording start simultaneously.

When the CD play of side A ends, the CD player enters pause mode. When the tape comes to the beginning of side B, the CD play of side B starts and the recording starts automatically.

Important

- Total playing time of the program of each side must be within the length of each side of the tape
- Up to 20th selection in the disc can be programmed. 21st selection cannot be programmed.

A



Editing the CD for Recording

The CD player automatically edits the selections on a CD according to the tape length.

- 1 Perform 1 to 5 of the CD recording operation, on page 48.
- 2 Press **EDIT**.
Make sure that **EDIT** and **---** appear in the display.
- 3 Designate the tape length of one side using **▶▶**, and **◀◀**, or **▶▶** and **◀◀**.
As you press **▶▶** or **◀◀**, the minute display changes as follows:

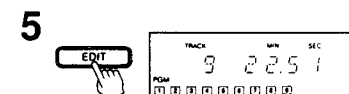
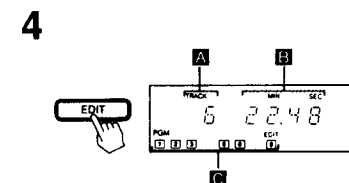
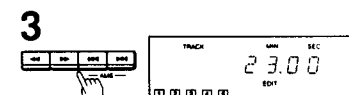
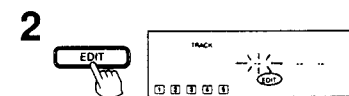
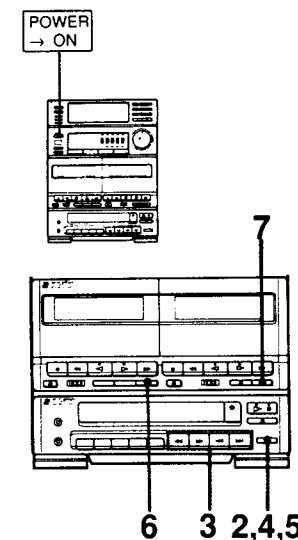
23 ↔ 27 ↔ 30 ↔ 37 ↔ 45 ↔ --

As you press **▶▶** or **◀◀**, the seconds increase or decrease by 10. After 50, the seconds show 00 and the minutes increase by 1.

- 4 Press **EDIT**.
The selections to be recorded are determined automatically. For details, see page 54.
Then the display shows **A** the last selection to be recorded, **B** total playing time, and **C** selections to be recorded.
- 5 For recording both sides, press **EDIT** again.
- 6 Press **CD SYNCHRO**.
- 7 Press **PAUSE** of the cassette deck.
The recording starts.

Note

- Up to 20th selection in the disc can be recorded. 21st selection cannot be recorded.
- Designate the total playing time shorter than the tape length in step 3.



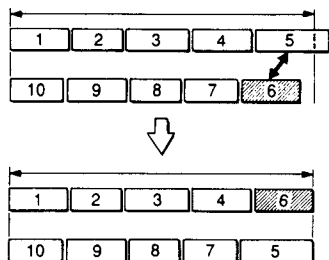
To record desired selections on the front side

Before pressing EDIT, program the desired selection.

How the CD player determines the selections **A**

The CD player selects the selections from the first one in the CD, summing up each playing time. When the total playing time exceeds the specified tape length, the last selection is eliminated. Then, the CD player looks for a selection whose length is within the remaining tape and substitutes it for the eliminated one.

A



Tape Dubbing (from deck A to B)

Dubbing the Whole Tape

- 1 Insert the recorded tape in deck A and the blank tape in deck B.
- 2 Set DIRECTION MODE.
To dub on one side:
To dub on both sides of the tapes with the same length:
To dub on both sides of the tapes with the different length: RELAY
- 3 Press HIGH SPEED.
- 4 Press PAUSE.
High speed dubbing starts.

To stop dubbing

Press on either deck A or B.
The tapes in both decks stop.

Note on DIRECTION MODE setting

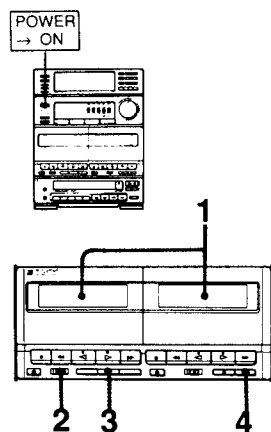
Position	Operation
	Dubbing stops at the end of the tape.
	When the tape in one deck comes to its end, it reverses immediately regardless of the tape position of the other deck.
RELAY	When the tape in one deck reaches its end, it stops until the other tape also comes to its end, and then both tapes reverse together.

When dubbing starts from the reverse side in the RELAY mode

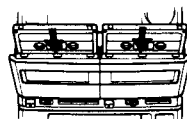
At the end of the reverse side, dubbing stops automatically.

Note

During high speed dubbing, only is operative.



1



2



3



4



Editing the Tape

- 1 Press TAPE of the function selector.
- 2 Insert the recorded tape in deck A and the blank tape in deck B.
- 3 Set DIRECTION MODE to or .
- 4 Locate the beginning of the portion to be dubbed on deck A, using or and then stop the tape.
- 5 While keeping REC pressed, press or of deck B.
- 6 Press or of deck A.
Normal speed dubbing starts.

To stop dubbing

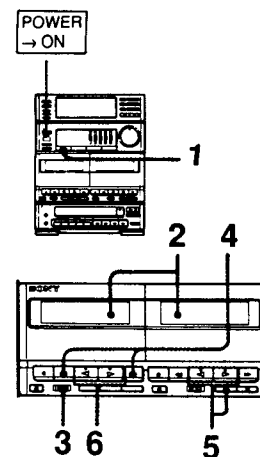
Press on both decks.

Is it necessary to set DOLBY NR?

No. The tape in deck B is automatically recorded in the same state as the tape in deck A.

Is it possible to listen to program sources other than tape during dubbing?

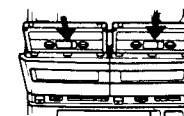
During high speed dubbing, yes. Any program source can be selected with the function selectors.
During normal speed dubbing, no. The source changes to that of the function selector pressed and the tape playback cannot be dubbed.



1



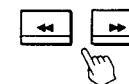
2



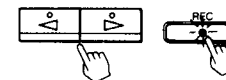
3



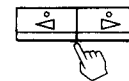
4



5



6



Timer-activated Operation

The power can be turned on and off automatically so that you can record a radio program while you are out, or wake up to music, etc.

The preset timer-on and -off time remain until you reset them or the power cord is disconnected.

Before setting the timer

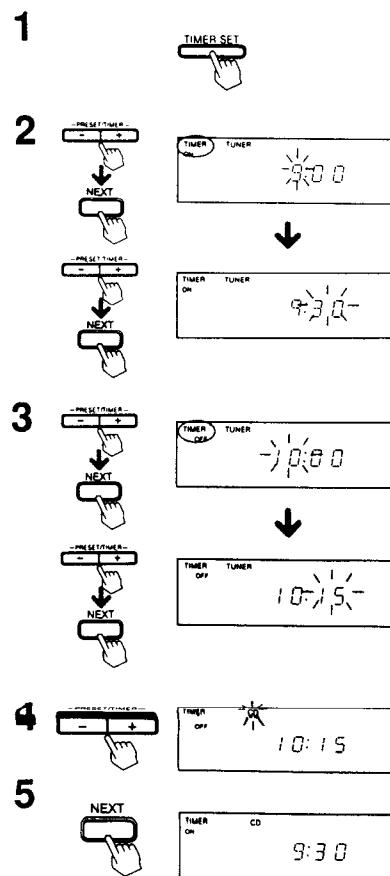
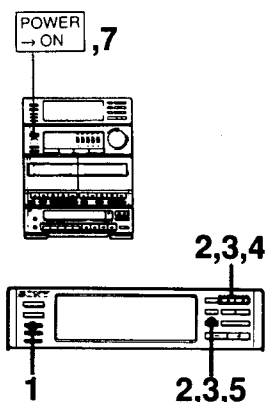
- Make sure the clock is set correctly.
- If you want to record a radio program, be sure to insert a cassette tape long enough.

Timer Setting

The illustrations show an example that the system turns on at 9:30 and off at 10:15.

- 1 Press TIMER SET.**
TIMER ON appears and a figure indicating hour blinks.
- 2 Set the hour and minute of the timer-on time with PRESET/TIMER + or -, and NEXT.**
TIMER OFF appears and a figure indicating hour blinks.
- 3 Set the hour and minute of the timer-off time with PRESET/TIMER + or -, and NEXT.**
The program source blinks.
- 4 Select the program source with PRESET/TIMER + or -.**
As you press + or -, the source changes:
TUNER ↔ TUNER REC ↔ TAPE ↔ CD
- 5 Press NEXT.**
- 6 Prepare for the source, selecting a stored station, inserting the disc or tape.**

- 7 Press POWER to turn off the system.**
Make sure that TIMER is on.
At the timer-on time, the system turns on automatically.



To change the time and program

- 1 Press TIMER SET.**
The timer-on hour blinks.
- 2 Press NEXT until the item to be changed blinks.**
- 3 Press PRESET/TIMER + or - until the desired time or source appears.**
- 4 Press NEXT until TIMER ON time appears.**
The display, then, shows TIMER OFF time, and returns to the previous display.

When you do not want to operate the timer program

Press **TIMER CONTROL** to turn off **TIMER**.
To reactivate the timer, press **TIMER CONTROL** to display **TIMER**.

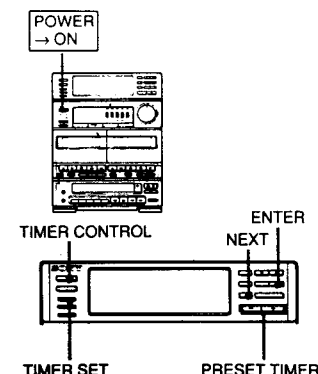
When the power is already on at the preset time

The function mode will be automatically changed to the preset one, even if you are playing a program of another function. However, when you have preset the **TUNER REC** mode, recording will not start even though the station is tuned in. Be sure to turn the power off before the preset time for tuner recording.

Important

On the recording side of a tape during timer recording

Playback or recording always starts from the front side (the side facing you). To record on the other side, be sure to turn over the tape, otherwise, recording on the front side will be erased.



Sleep Timer Operation

By setting the sleep timer, the system power can be turned off after the preset duration.

Sleep Timer Setting

- 1 Play the desired program source.
- 2 Press SLEEP to select the desired duration in minute.

As you press SLEEP, the indication changes as follows:

90 → 80 → ... 10 → --

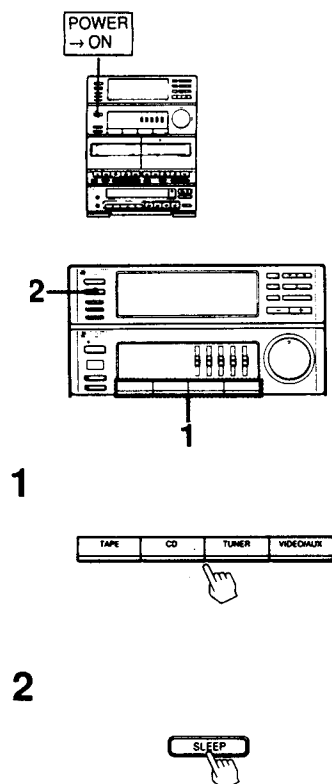
To turn off the system before the time of the sleep timer comes

Press POWER.

To check the remaining time of the sleep timer

Press SLEEP once, and the remaining time appears.

The display returns to the previous indication in several seconds.



Microphone Mixing

Mixing Operation A

- 1 Connect the microphone to MIX MIC jack.
- 2 Select program source with the function buttons and play it.
- 3 Sing or speak into the microphone.
- 4 Adjust the total volume.

When the mixing is over

Be sure to disconnect the microphone.

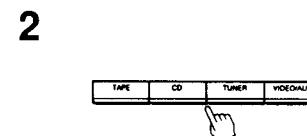
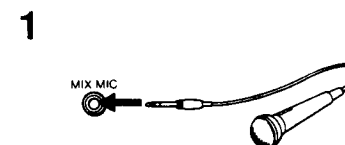
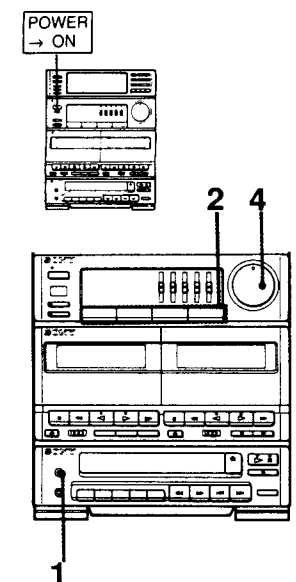
Recording the Sound Mixed with a Source

- 1 Mix the sound as described above.
- 2 Insert a tape in deck B.
- 3 Set deck B to the record mode.

Recording from a Microphone Only

- 1 Press CD.
- 2 Press ■ of the CD player.
- 3 Insert a tape in deck B.
- 4 While keeping REC pressed, press ▷ or ◁ on deck B. Recording starts.
- 5 Speak or sing into the microphone.

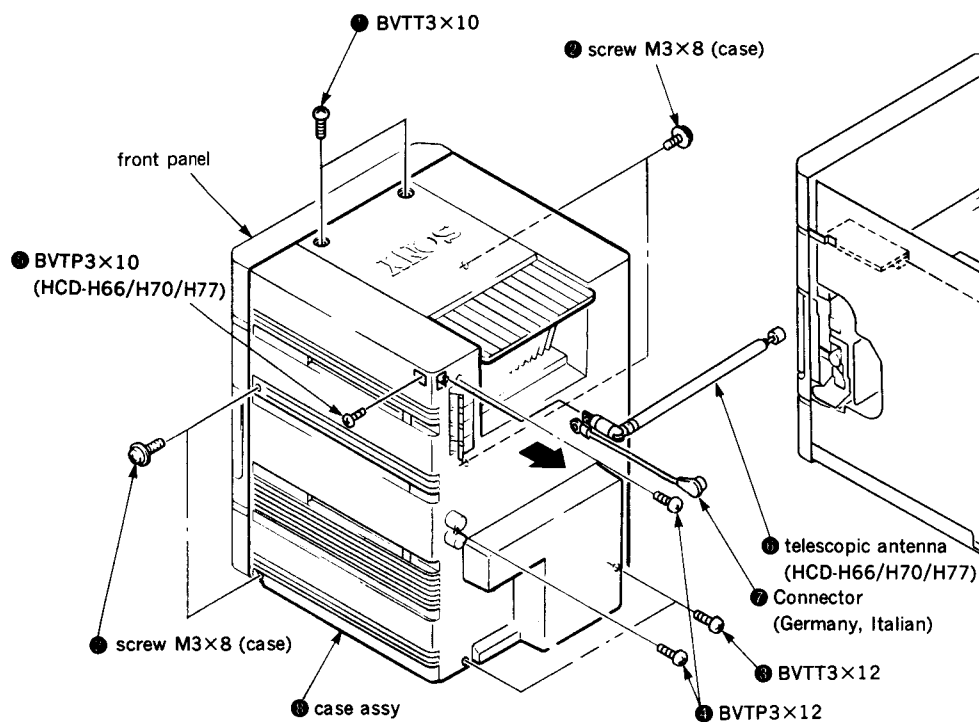
To stop howling (acoustic feedback)
Placing the microphone too close to the speakers may cause howling. Move the microphone away from the speakers or change the direction it faces.



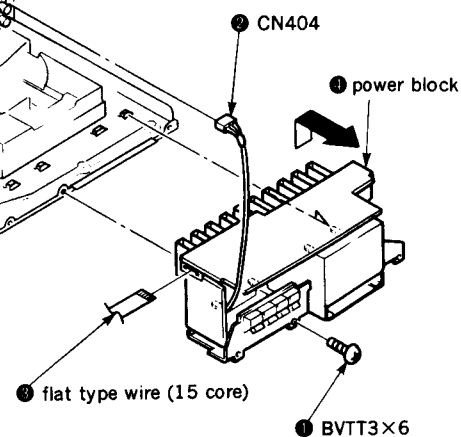
SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

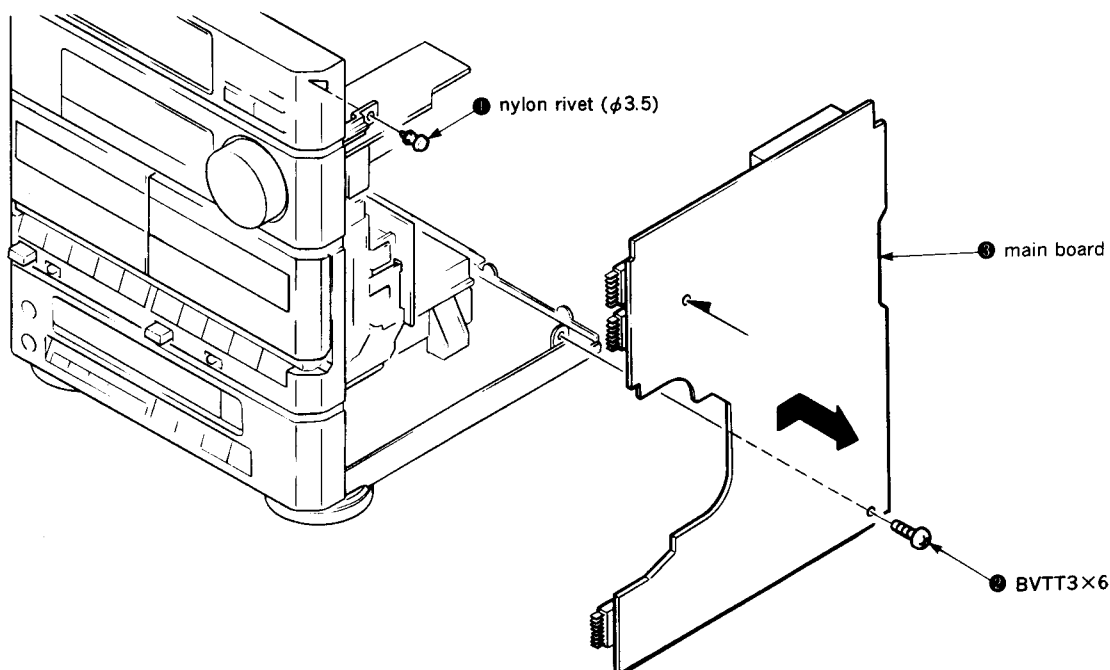
3-1. CASE



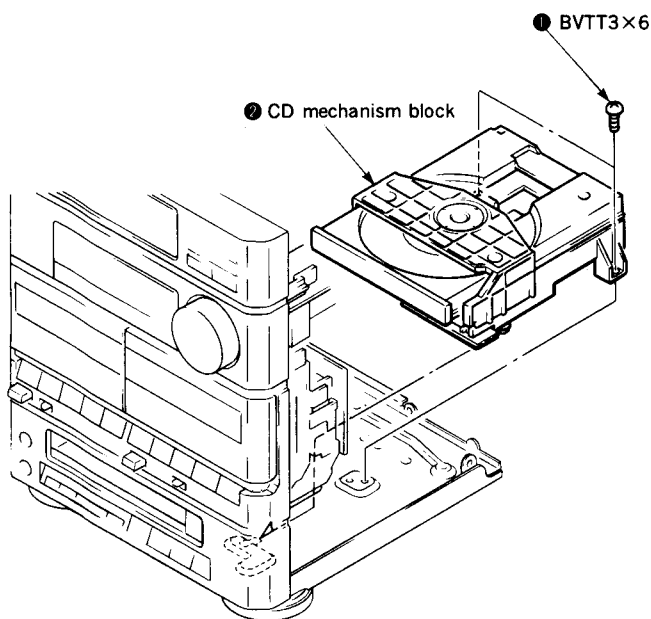
3-2. POWER BLOCK



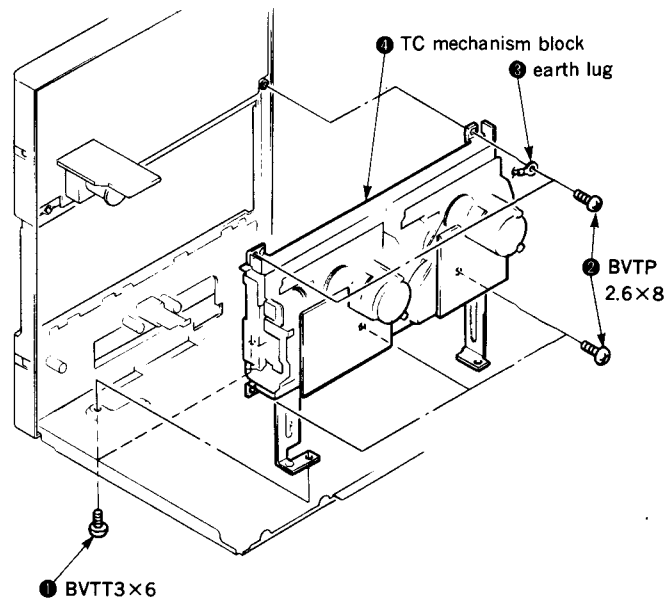
3-3. MAIN BOARD



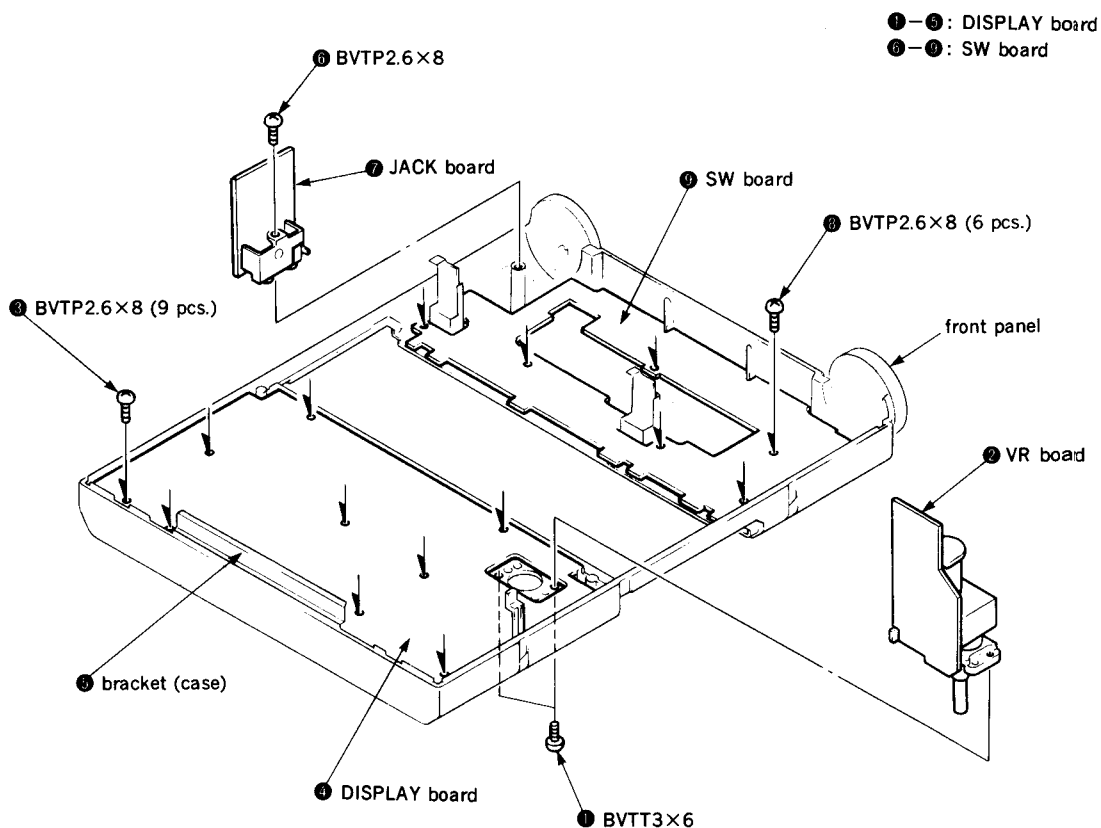
3-4. CD MECHANISM BLOCK



3-5. TC MECHANISM BLOCK



3-6. DISPLAY/SW/JACK/VR BOARD



SECTION 4 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belt
capstan	idler
- Demagnetize the record/playback head with a head demagnetizer.
(Head demagnetizer do not approach for the erase head.)
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g•cm (0.42 to 0.83oz•inch)
Forward back tension	CQ-102C	1 to 5g•cm (0.014 to 0.069oz•inch)
Reverse	CQ-102RB	30 to 60g•cm (0.42 to 0.83oz•inch)
Reverse back tension	CQ-102RB	1 to 5g•cm (0.014 to 0.069oz•inch)
Forward, Reverse	CQ-201B	100 to 170g•cm (1.39 to 2.36oz•inch)

• Timer Test Mode

When BAND, SHIFT and PRESET/TIMER+ buttons are pressed at the same time the following time test operation is performed. After the operation, it becomes in the system reset mode. Take care that the frequency preset to the tuner is initialized.

- POWER OFF
- Timer set

Clock	AM10 : 23
Timer ON	AM10 : 24
Timer OFF	AM10 : 31
Function	TUNER
- FL tube display (FLT501)

All light

↓ for 2 seconds

"AM 10 : 23"

↓ for 0.5 second

"AM 10 : 24"

↓ for 0.5 second

"TUNER"

↓ for 2 seconds

Last channel

↓ for 1 second

"AM 00 : 00" flashing

← POWER ON
 ← POWER ON
- Finish

SECTION 5 ELECTRICAL ADJUSTMENTS

DECK SECTION

- The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
- The adjustment and measurement should be performed for both L-CH and R-CH.
 - Switch position
DOLBY NR switch : OFF

• Test Tape

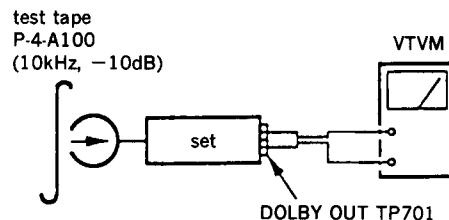
Tape	Contents	Use
P-4-A100	10kHz, -10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48A	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

DECK A DECK B

Procedure :

- Forward Playback Mode



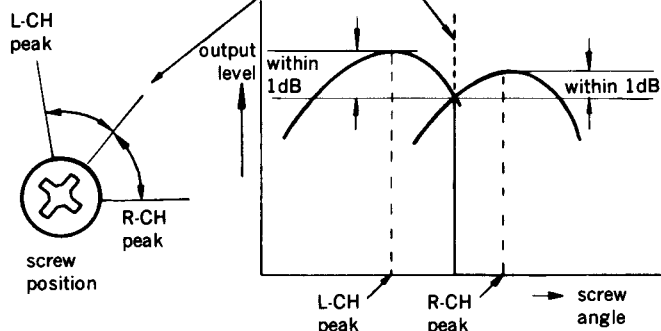
• Preset Frequency in Restting

When pressing the system reset button (S702) of the rear side of the unit, the following frequency is preset to the tuner part. When the system reset is performed in repairing, be sure to return to the frequency set by the user.

FM	HCD-H66/H77/H1200/H1400 () : Italian model		
	MW		LW
A1 87.5MHz	A6 531(522)kHz	B1	153(144)kHz
A2 88.0MHz	A7 603(522)kHz	B2	162kHz
A3 98.0MHz	A8 999(522)kHz	B3	216kHz
A4 106.0MHz	A9 1040(522)kHz	B4	270kHz
A5 108.0MHz	A0 1602(1611)kHz	B5	279(288)kHz

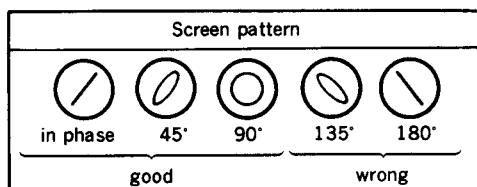
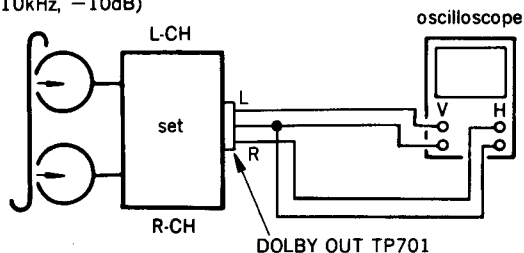
FM	HCD-H70 MWtuning interval : 9k (10k)		
	MW		SW
A1 87.5MHz	A6 531(530)kHz	B1	5.95MHz
A2 88.0MHz	A7 603(620)kHz	B2	7.00MHz
A3 98.0MHz	A8 999(1050)kHz	B3	12.00MHz
A4 106.0MHz	A9 1404(1490)kHz	B4	17.00MHz
A5 108.0MHz	A0 1602(1710)kHz	B5	17.90MHz

- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



3. Playback Mode

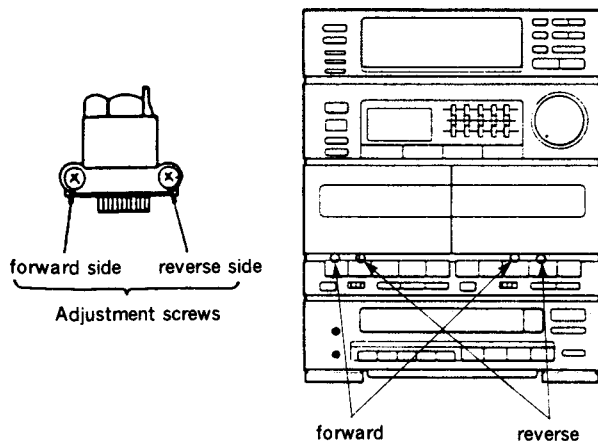
test tape
P-4-A100
(10kHz, -10dB)



- Change the review playback mode and repeat the steps 1 to 3.
- After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :

—record/playback head (deck A and B)



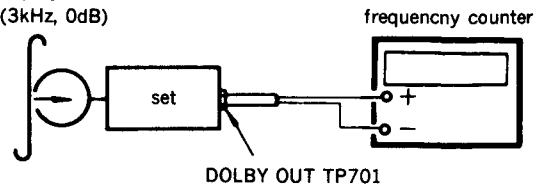
Tape Speed Adjustment DECK A DECK B

Procedure :

- Perform high speed adjustment before normal speed adjustment.

Mode : playback

test tape
WS-48A
(3kHz, 0dB)



Speed	Test pin (TP601)	Deck	Adjustment	Frequency counter
*High	short	A	M1 (H)	5,960 to 6,040Hz
		B	M2 (H)	
Normal	open	A	M1 (L)	2,980 to 3,020Hz
		B	M2 (L)	

* Continue to press HIGH SPEED DUBBING switch (S312) in playback mode: High speed playback.

Frequency difference between the beginning and the end of the tape should be within $\pm 1.5\%$.

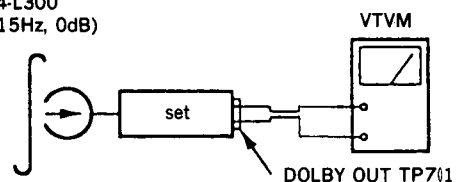
Adjustment Location : motors (M1 (deck A), M2 (deck B))

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : playback

test tape
P-4-L300
(315Hz, 0dB)



Deck A is RV41A (L-CH) and RV61A (R-CH), deck B is RV41B (L-CH) and RV61B (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :

LINE OUT level : $-6 \pm 0.5\text{dB}$ (0.37 to 0.41V)

Level Difference between Channels : within 1dB

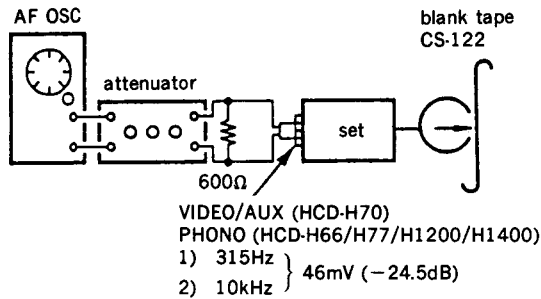
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD-A and MD-B boards

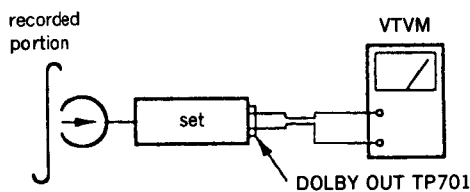
Record Bias Adjustment **DECK B**

Procedure:

1. record mode



2. playback mode



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV42B (deck A) and RV62B (deck B) to repeat step 1 and 2.

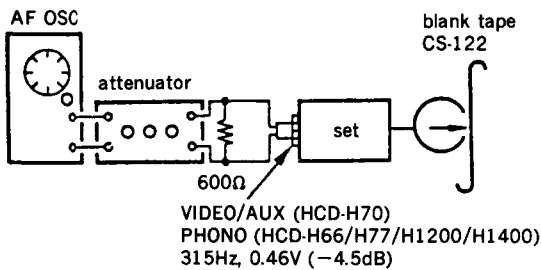
Adjustment level: Playback output of 315Hz to playback output of 10kHz: -0.5dB to 0.5dB

Adjustment Location: MD-B board

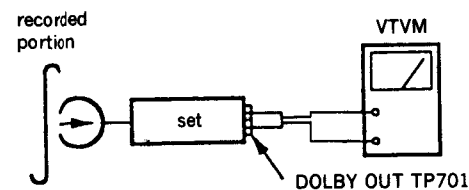
Record Level Adjustment **DECK B**

Procedure:

1. record mode



2. playback mode



Confirm playback the signal recorded in step become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV701 (deck A) and RV751 (deck B) to repeat step 1 and 2.

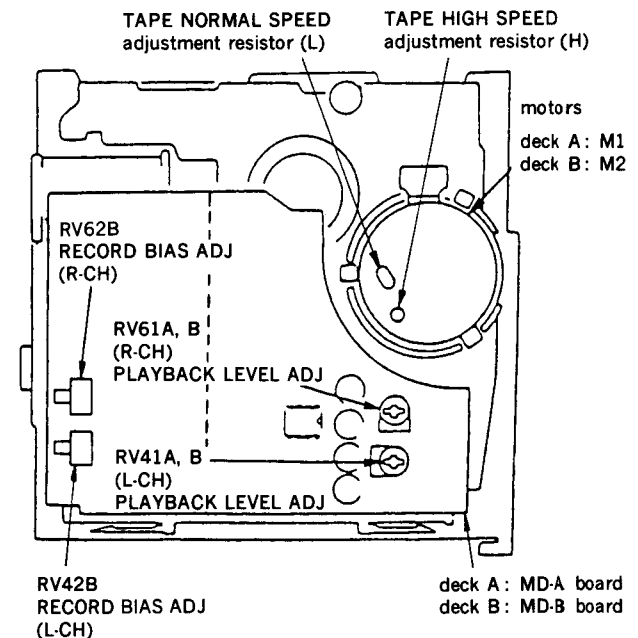
Adjustment Level:

LINE OUT level: $-6 \pm 0.5\text{dB}$ (0.37 to 0.41V)

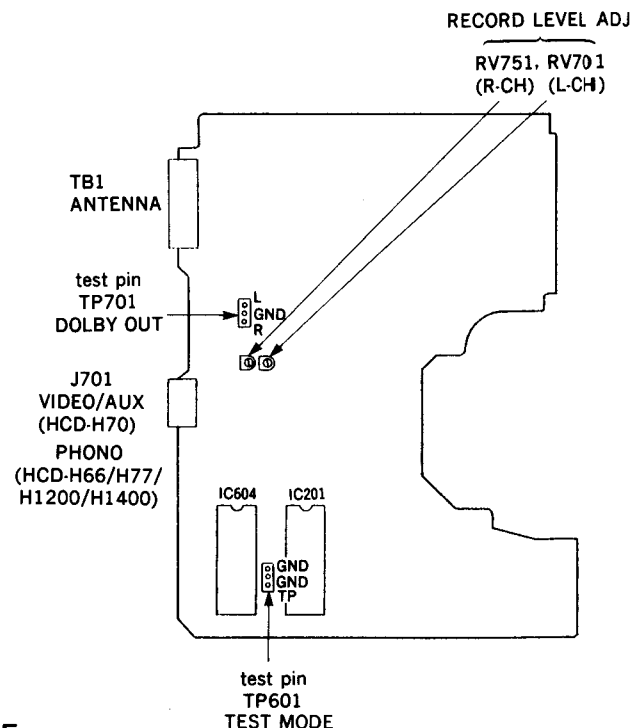
Adjustment Location: main board

Adjustment Location:

mechanism deck—rear side—



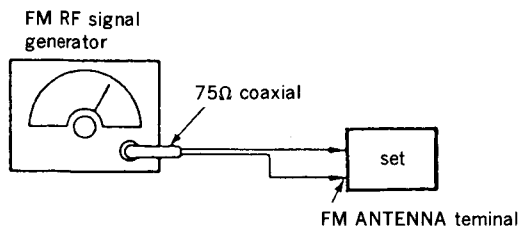
main board—component side—



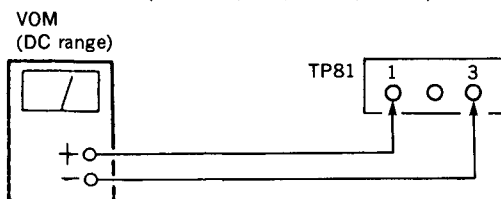
TUNER SECTION

FM SECTION ADJUSTMENTS

Setting :



Carrier frequency: 98MHz
 Modulation: 1kHz, 75kHz deviation (HCD-H70)
 1kHz, 40kHz deviation (HCD-H66/H77/H1200/H1400)



FM Discriminator Alignment (NULL Check)

Band : FM

Procedure :

1. Supply a 1mV (60dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust IFT82 for 0V reading on the VOM.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level Adjustment

Band : FM

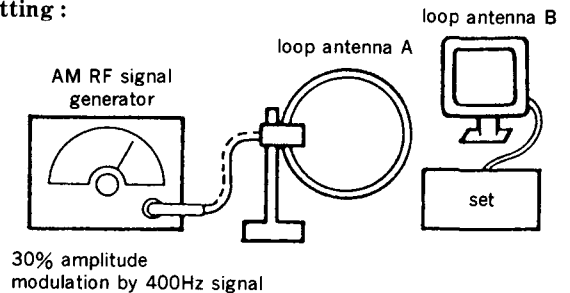
Procedure :

1. Supply a 32μV (30dBμ) 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV81 so that the **TUNED** light up.

Adjustment Location : main board

AM SECTION ADJUSTMENTS

Setting :



MW Tuned Indication Lighting Level Adjustment

Band : MW

Procedure :

1. Set loop antenna A so that the loop antenna, B input level becomes 0.45mV (53dBμ)
2. Tune the set to 1,404kHz.
3. Adjust the RV82 so that the **TUNED** light up.

SW OSC Voltage Adjustment (HCD-H70)

Band : SW

Procedure :

1. Connect the VOM to TP (OSC).
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1V reading on the VOM.
4. Tune the set to 17.90MHz.
5. Adjust CT22 for 8.3 to 8.7V reading on the VOM.

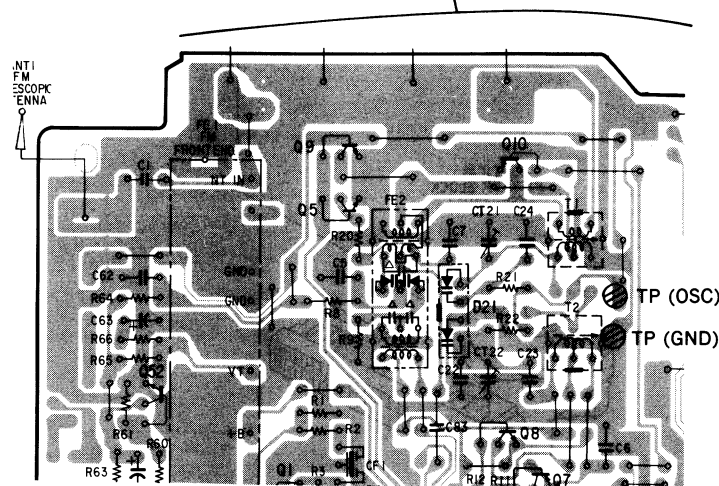
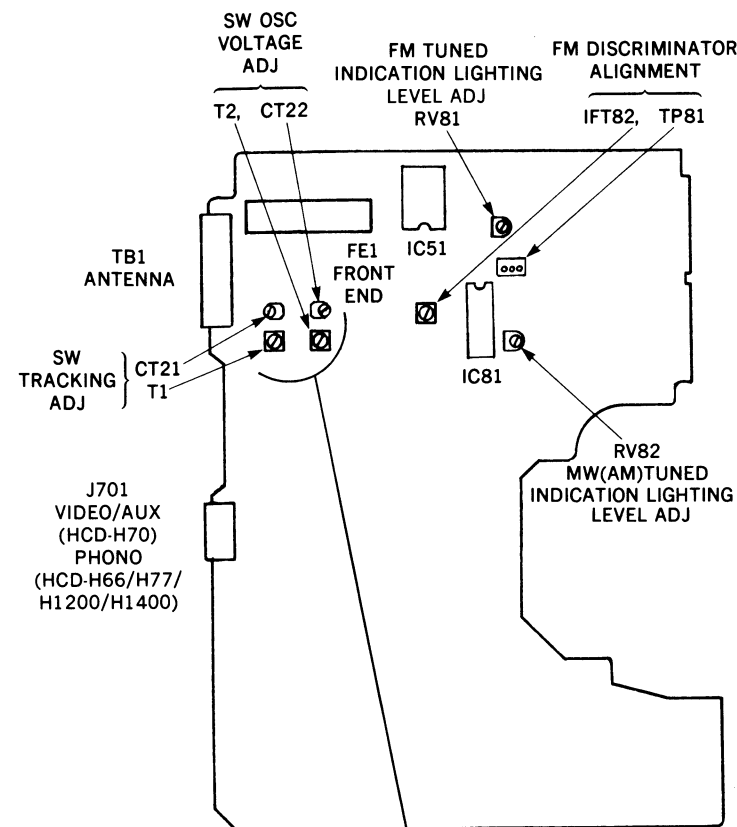
SW Tracking Adjustment (HCD-H70)

Band : SW

Procedure :

1. Connect the VOM to speaker terminal.
2. Adjust for a maximum reading on VOM.

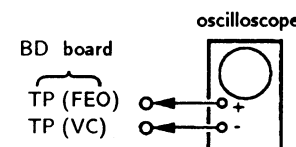
Signal generator and Set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CT21

CD SECTION

Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than $10M\Omega$ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

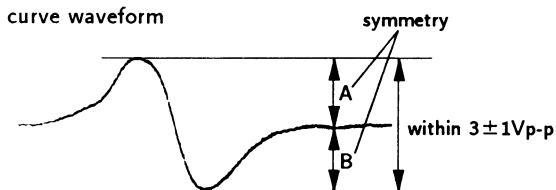
S Curve Check



Procedure :

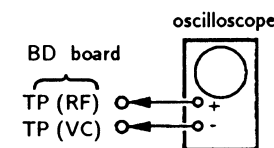
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.

S curve waveform



5. After check, remove the lead wire connected in step 2.
- Note :**
- Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
 - Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

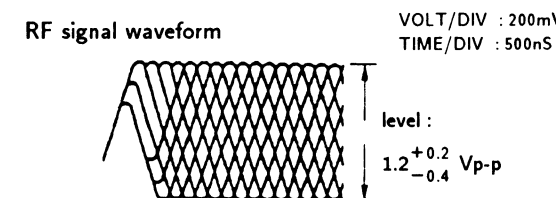


Procedure :

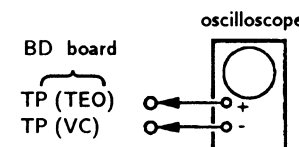
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape “ \diamond ” can be clearly distinguished at the center of the waveform.



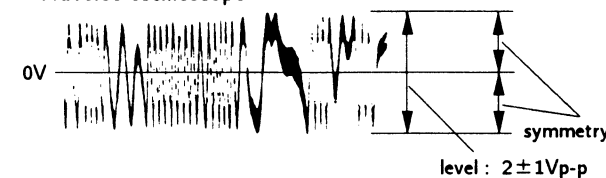
E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

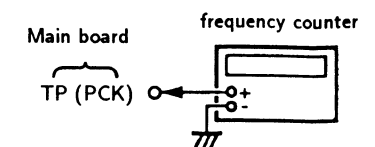


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is
4. 3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.
There is no problem.

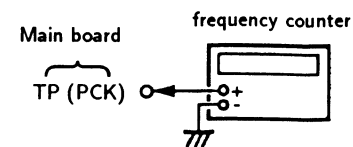
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

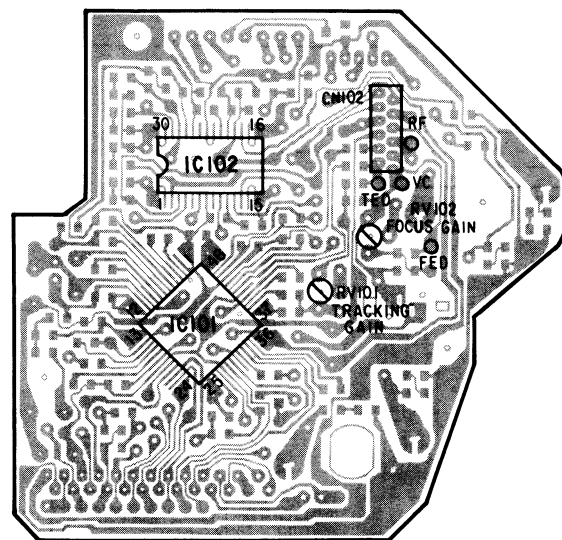
Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.

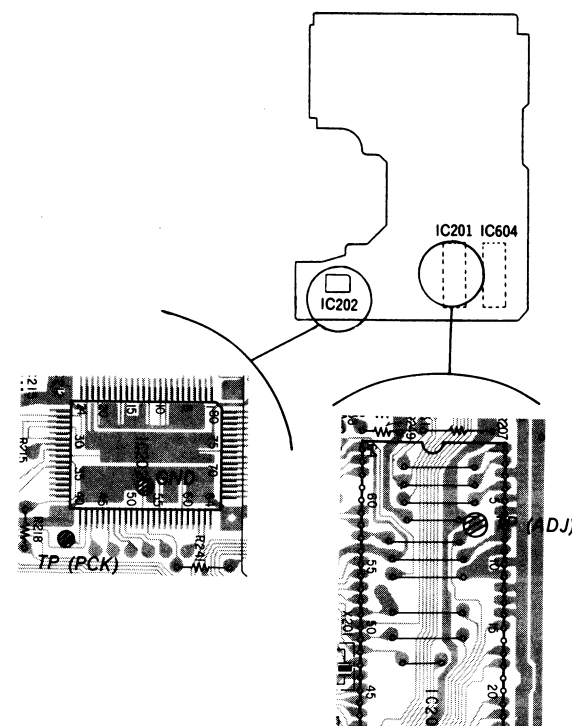
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Locations : [BD board]



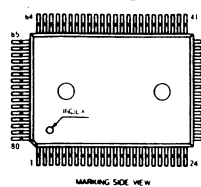
[Main board]



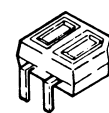
SECTION 6 DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

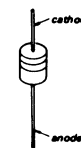
CXA1372Q
CXD2500Q



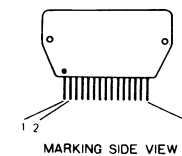
GP-2S09-C



HZS6B1L
HZS7B3L
UZ-3.0BS
UZ-4.7BSC
UZL-24L
UZL-9H1
1SS120
1SS202-1
11ES2



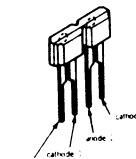
STK-4132MK2



2SB1013-4
2SC3112-B
2SD1616A-K



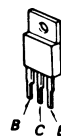
KV1236-Z



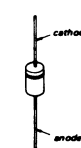
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF
2SC2724-CD
2SC3622A-LK



2SB1370-EF
2SC2001-LK
2SD1761-EF



UZP-5.1BC



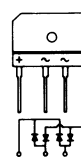
DTC114TS
2SA1175-HFE



2SK246-GR3
2SK246-Y



RBA-402



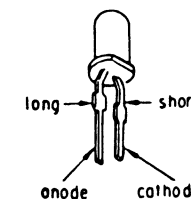
DTC144EK



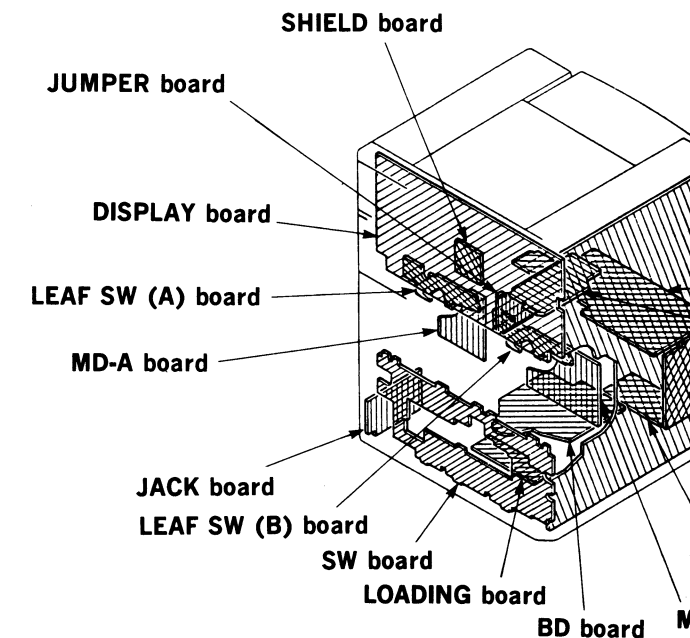
GL-1EG112-CD
GL-1HD112-DE
GL-1HY112-CD



SEL1210RM-LC05-CD
SEL1910DM-LC05-CD

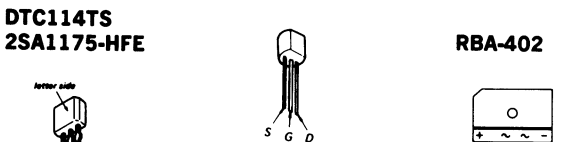
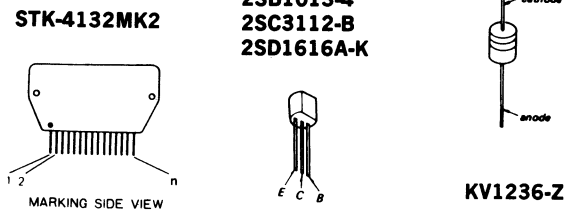
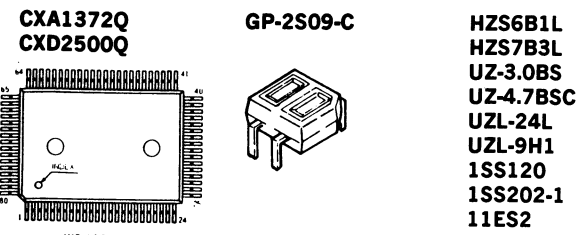


6-2. CIRCUIT BOARDS LOCATION

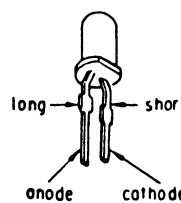


SECTION 6 DIAGRAMS

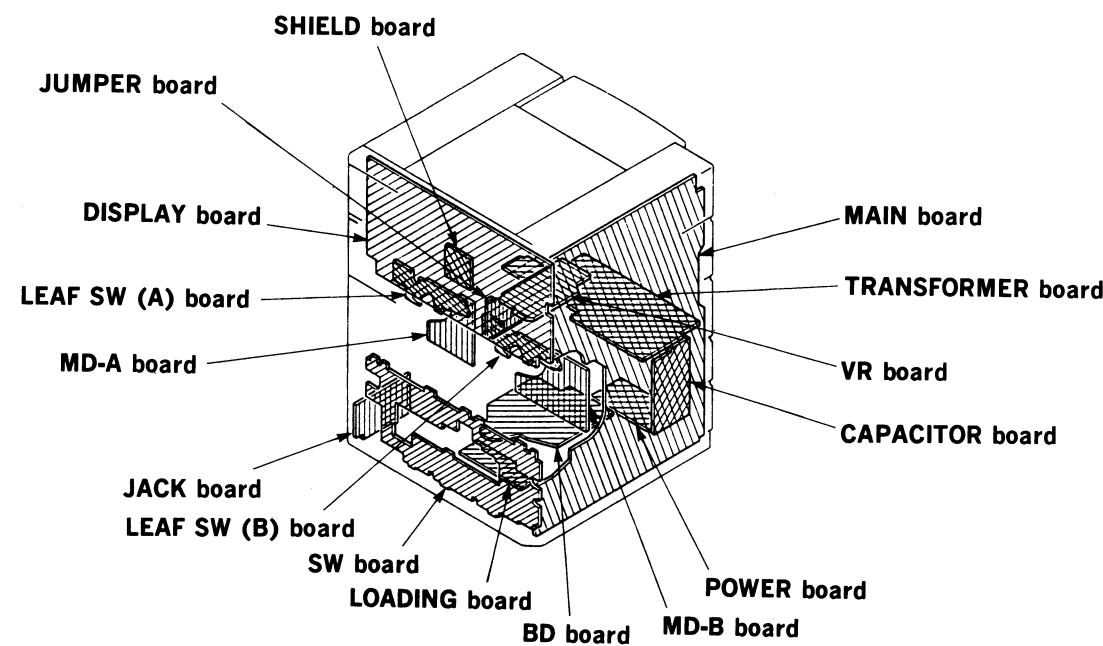
6-1. SEMICONDUCTOR LEAD LAYOUTS



SEL1210RM-LC05-CD
SEL1910DM-LC05-CD



6-2. CIRCUIT BOARDS LOCATION



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D11A	I-13	IC602	C-27	Q231	F-31
D11B	I-7	IC603	E-27	Q232	E-31
D21(*2)	C-24	IC604	C-31	Q233	F-30
D81B	G-2	IC701(*1)	C-20	Q234	E-31
D201	F-30	IC701(*2)	C-26	Q252	E-30
D205	D-29	IC702(*1)	D-20	Q253	E-30
D206	C-13	IC702(*2)	D-26	Q351	D-6
D207	C-13	IC703(*1)	E-20	Q352	C-7
D301	E-8	IC703(*2)	E-26	Q353	C-6
D302	E-8	IC704(*1)	B-20	Q354	D-11
D303	E-12	IC705(*1)	F-20	Q601	E-28
D304	E-12	IC705(*2)	F-26	Q602	B-28
D305	D-7	IC706(*1)	I-18	Q603	E-28
D306	D-8	IC706(*2)	I-24	Q604	B-29
D307	D-9	IC999	H-30	Q605	C-29
D308	D-12			Q606	B-29
D309	D-13	Q1(*1)	D-17	Q607	B-31
D601	E-28	Q1(*2)	D-23	Q608	D-28
D602	C-28	Q2(*3)	D-17	Q609	D-28
D603	D-29	Q3(*1)	E-18	Q610	D-28
D406	B-31	Q3(*2)	E-24	Q611	D-28
D605	D-29	Q4(*1)	D-18	Q612	D-29
D606	C-29	Q4(*2)	D-24	Q613	E-27
D701	B-27	Q5(*1)	B-17	Q614	E-27
D702	B-27	Q5(*2)	B-23	Q615	F-28
D703(*1)	H-19	Q6	E-24	Q616	E-28
D703(*2)	H-25	Q7(*1)	D-18	Q617	C-31
D741(*1)	F-20	Q7(*2)	D-24	Q701(*1)	E-20
D741(*2)	F-26	Q8(*1)	D-18	Q103(*2)	E-26
D742(*1)	G-20	Q8(*2)	D-24	Q741(*1)	G-20
D742(*2)	G-26	Q9(*1)	B-17	Q741(*2)	G-26
D743(*1)	G-20	Q9(*2)	B-23	Q742(*1)	G-20
D743(*2)	G-26	Q11A	I-9	Q742(*2)	G-26
D744(*1)	G-20	Q11B	I-3	Q751(*1)	E-20
D744(*2)	G-26	Q12A	H-12	Q751(*2)	E-26
D745	F-28	Q12B	H-5	Q781(*1)	E-20
D746	E-28	Q51(*1)	D-16	Q781(*2)	E-26
		Q51(*2)	D-22	Q782(*1)	E-20
IC51(*1)	E-16	Q52(*1)	D-16	Q782(*2)	E-26
IC51(*2)	E-22	Q52(*2)	D-22	Q791(*1)	H-19
IC81(*1)	F-18	Q53(*1)	D-15	Q791(*2)	H-25
IC81(*2)	F-24	Q54(*1)	D-15	Q792(*1)	G-19
IC81A	G-9	Q81B	I-2	Q792(*2)	G-25
IC81B	G-3	Q82B	H-2	Q794(*1)	H-18
IC101(BD)	E-34	Q83B	H-2	Q794(*2)	H-24
IC102(BD)	D-34	Q101(*1)	H-16	Q999	G-29
IC201	D-31	Q101(*2)	H-22		
IC202	H-31	Q101(BD)	F-35		
IC221	G-31	Q102(*1)	H-16		
IC222	F-32	Q102(*2)	H-22		
IC223	F-31	Q103(*1)	G-18		
IC253	E-29	Q103(*2)	G-24		
IC601	D-27	Q201	E-29		

*1: Used on HCD-H66/H77/H1200/H1400.

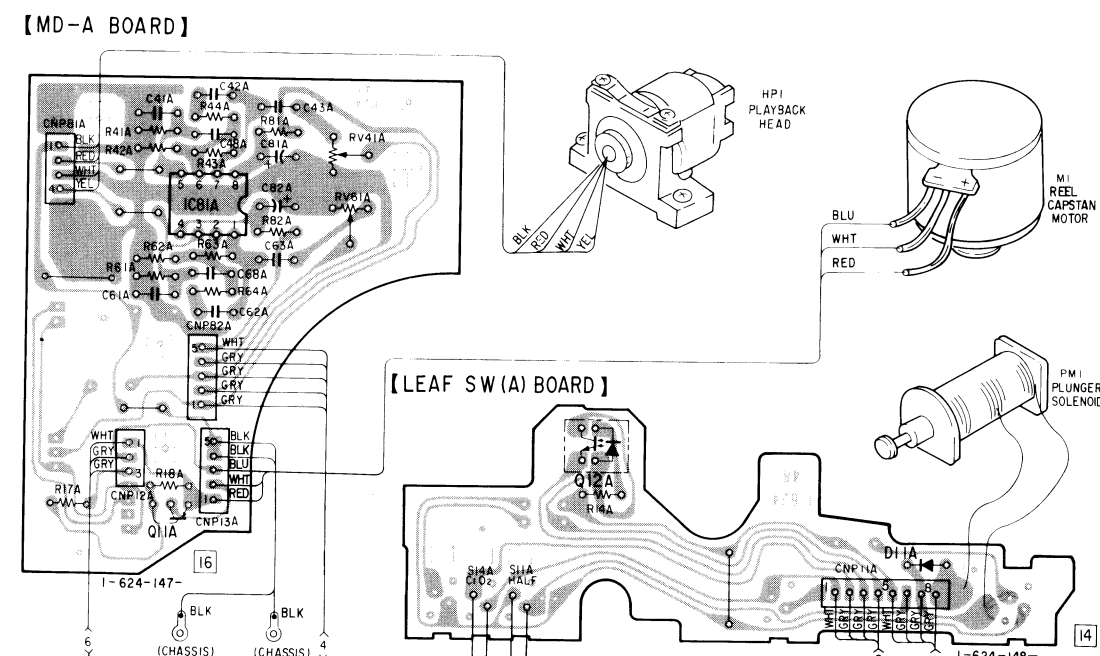
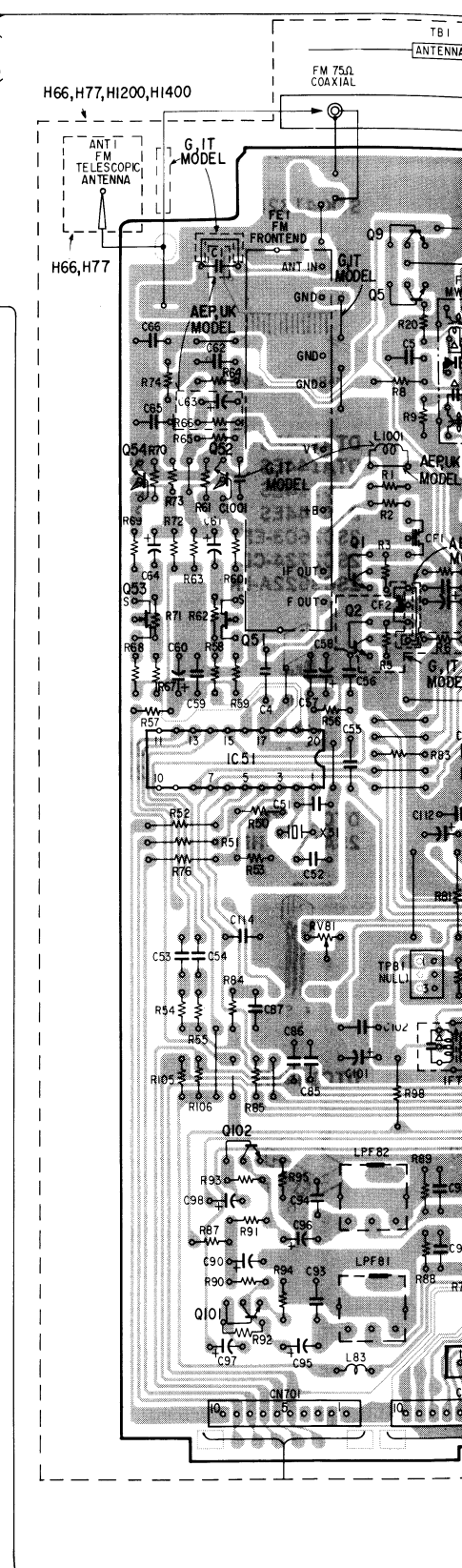
*2: Used on HCD-H70.

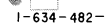
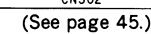
*3: Used on G, IT model.

BD: Used on BD board.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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1





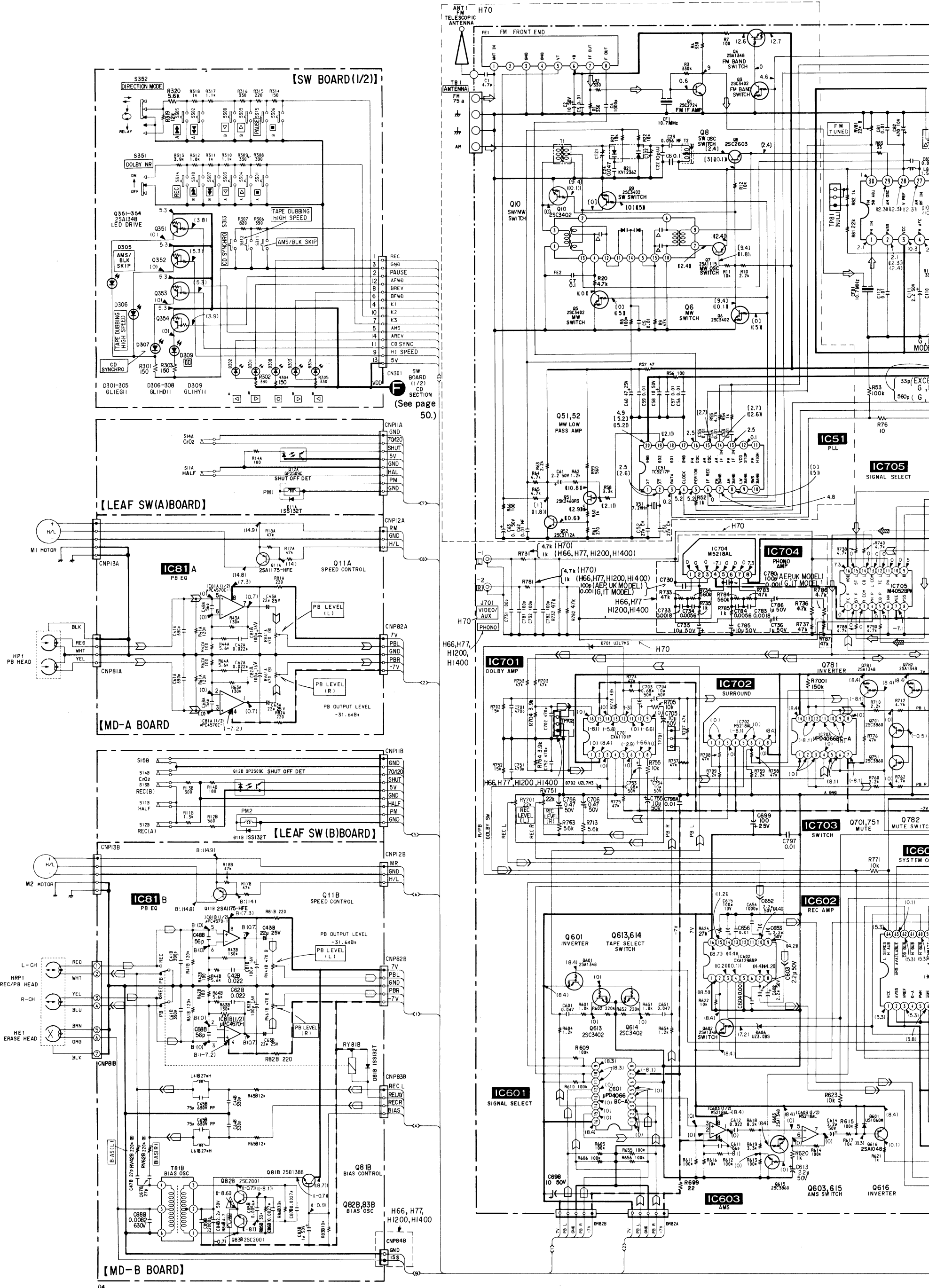
6-4. SCHEMATIC DIAGRAM—Tuner/Deck Section—

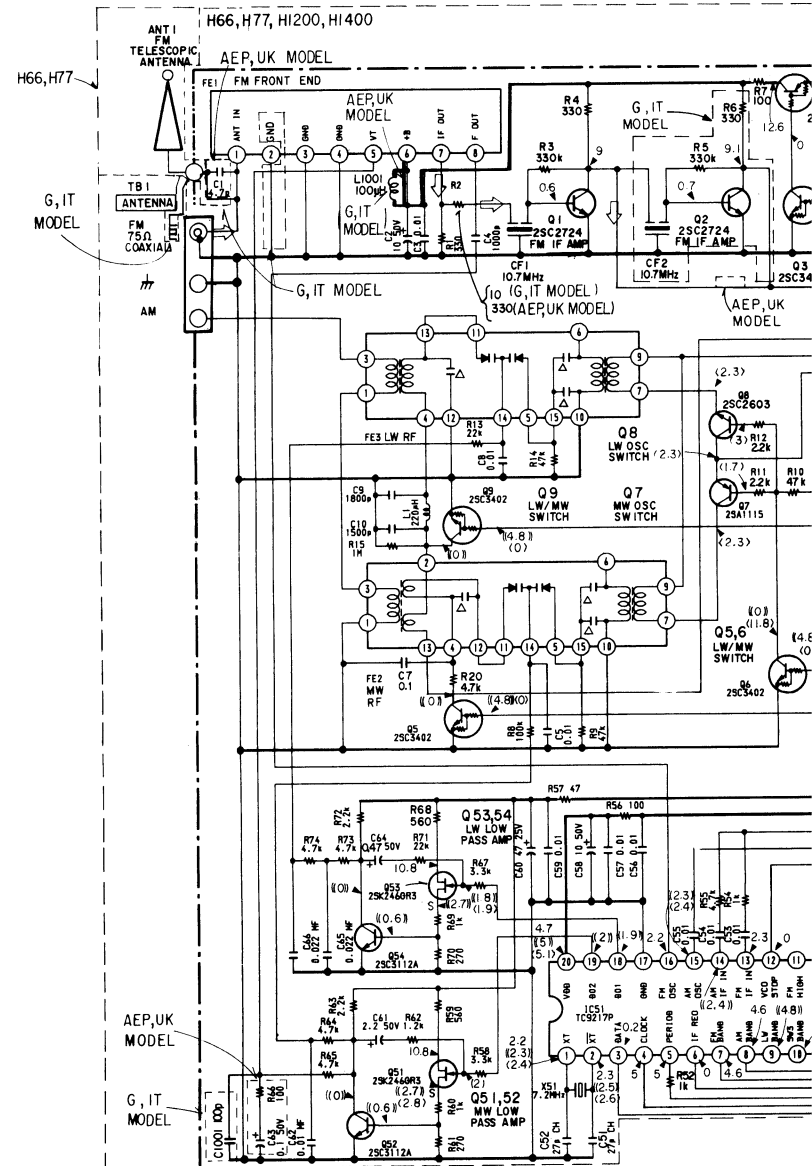
• Refer to page 51 for IC Block Diagrams.

• Refer to page 54 for FE1 FM Front End.

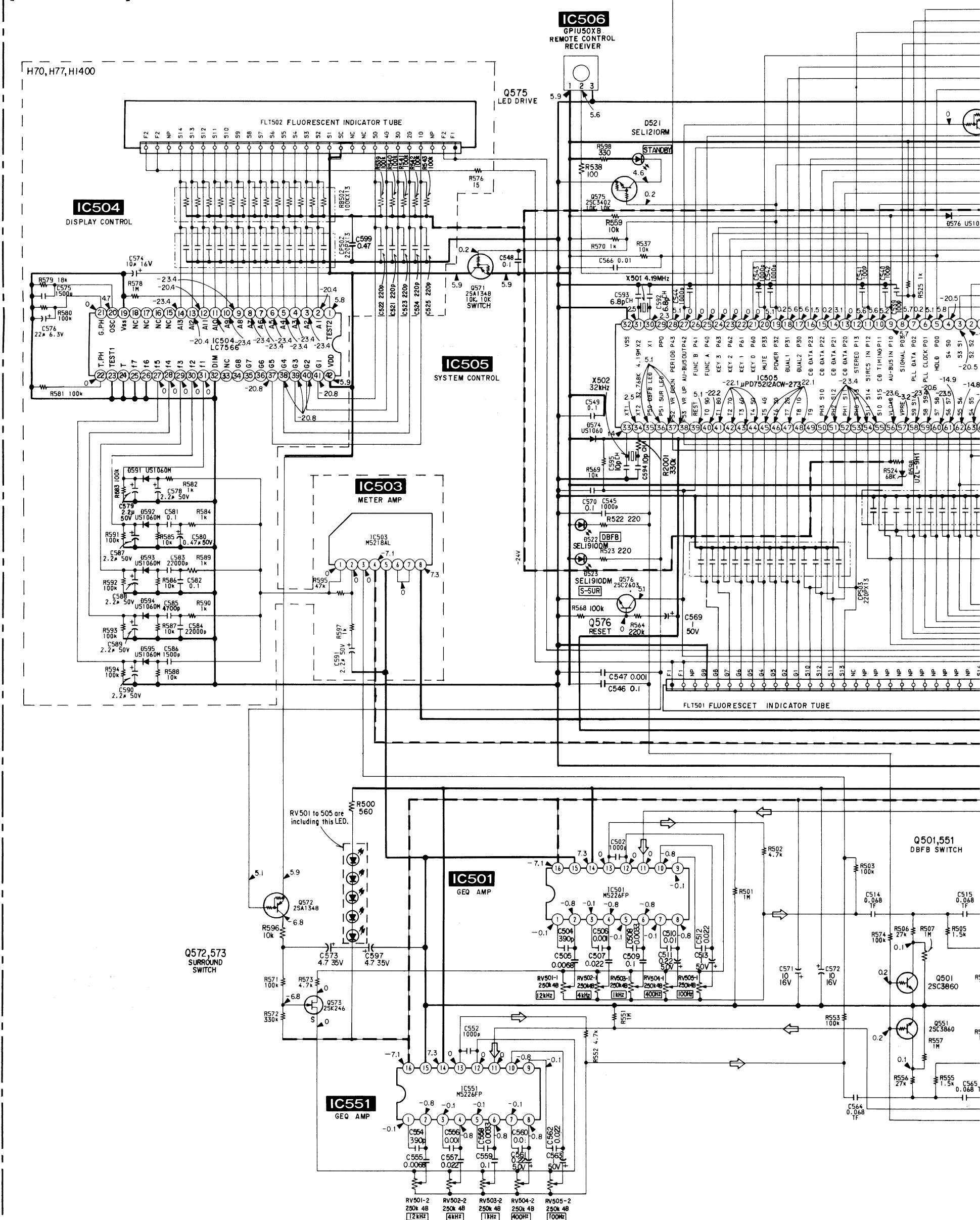
1 2 3 4 5 6 7 8 9 10 11

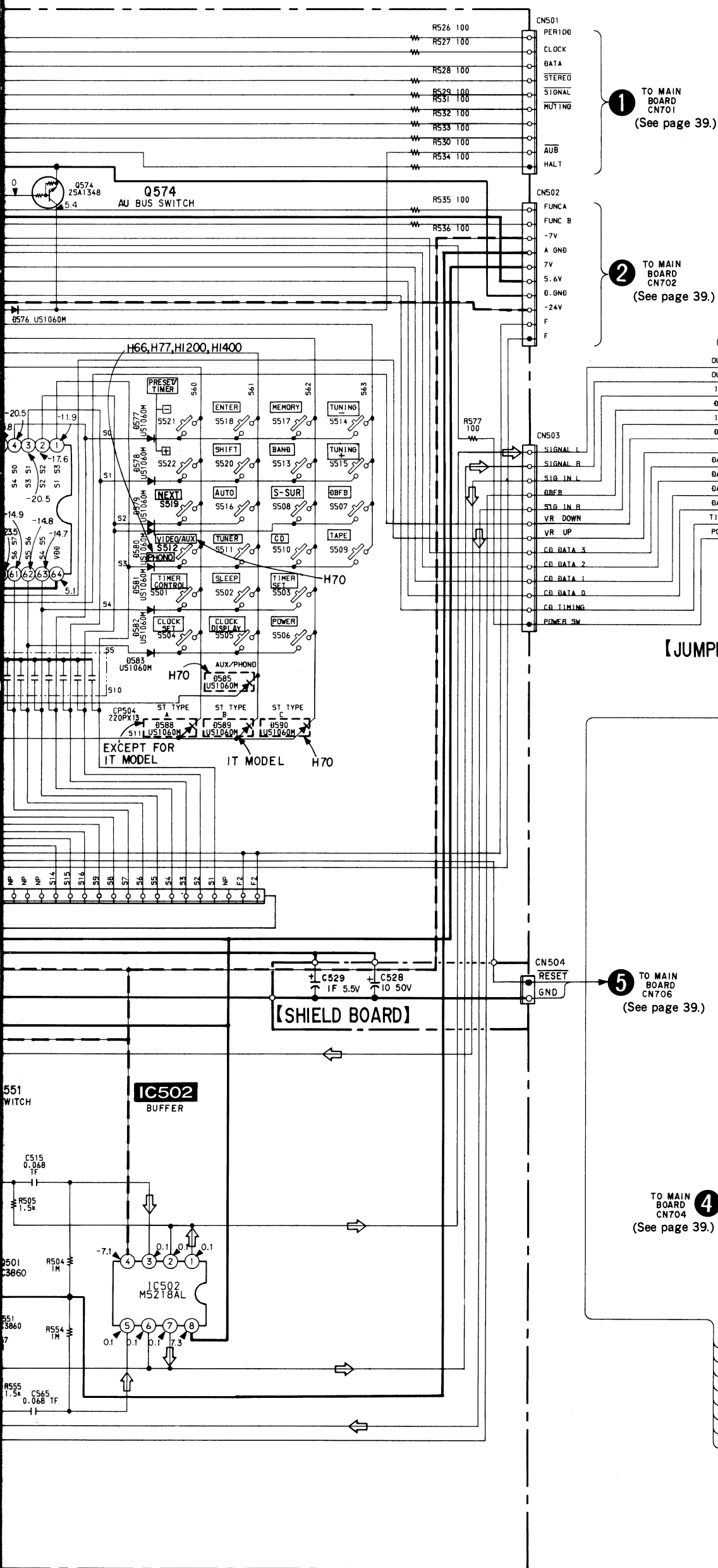
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P





1	2	3	4	5	6	7	8	9	10	11
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1 TO MAIN BOARD CN701 (See page 39.)

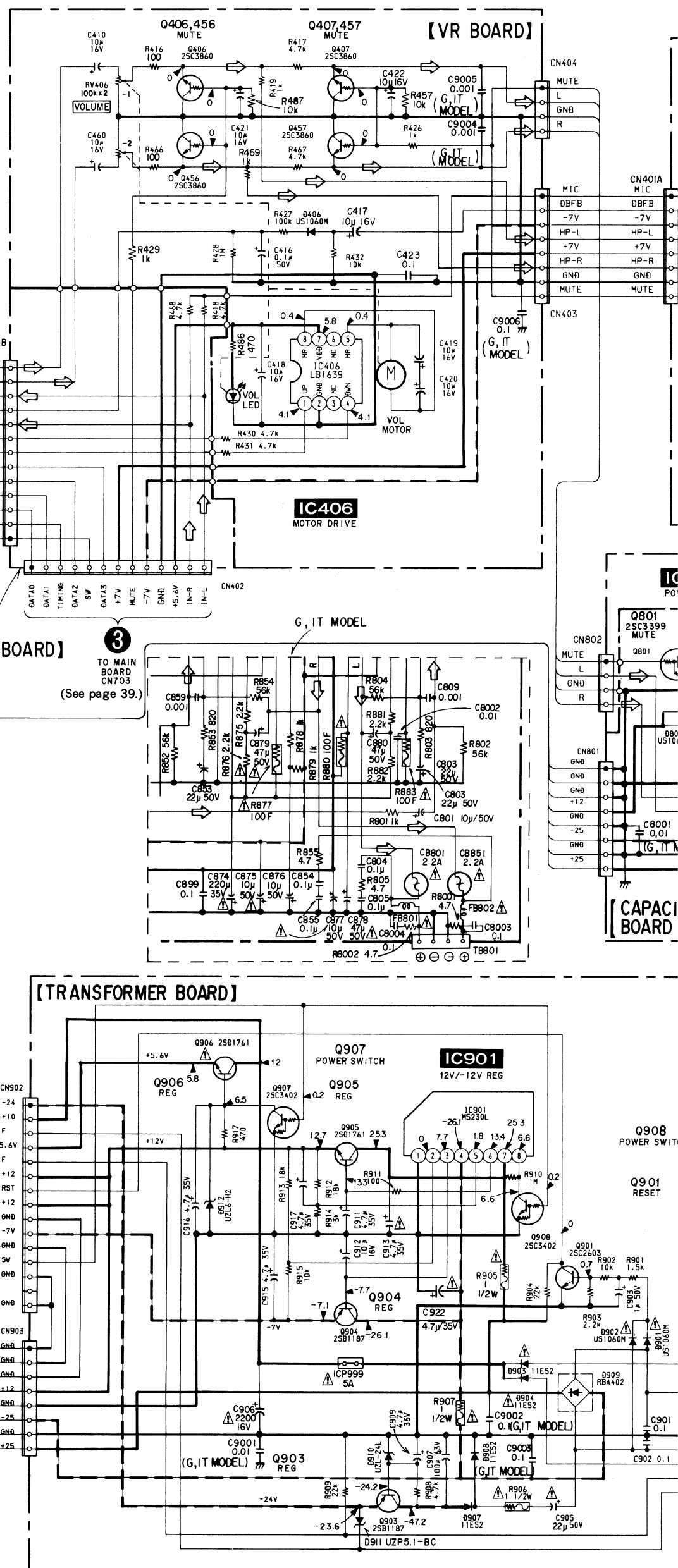
2 TO MAIN BOARD CN702 (See page 39.)

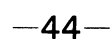
[JUMPER BOARD]

3 TO MAIN BOARD CN703 (See page 39.)

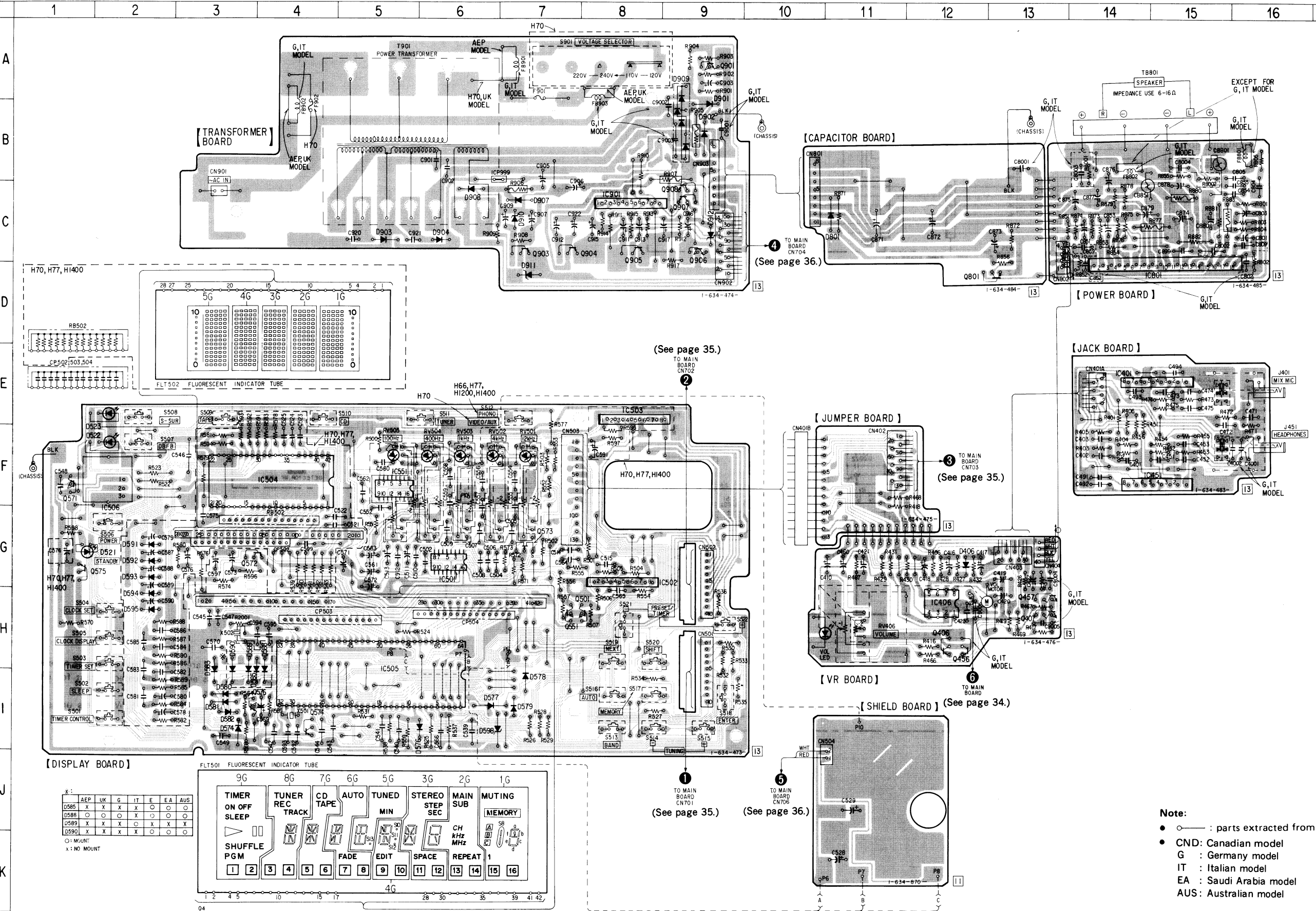
5 TO MAIN BOARD CN706 (See page 39.)

4 TO MAIN BOARD CN704 (See page 39.)





6-6. PRINTED WIRING BOARDS—Power/Amplifier/Display Section— • Refer to page 29 for Semiconductor Lead Layouts.



• Semiconductor Location

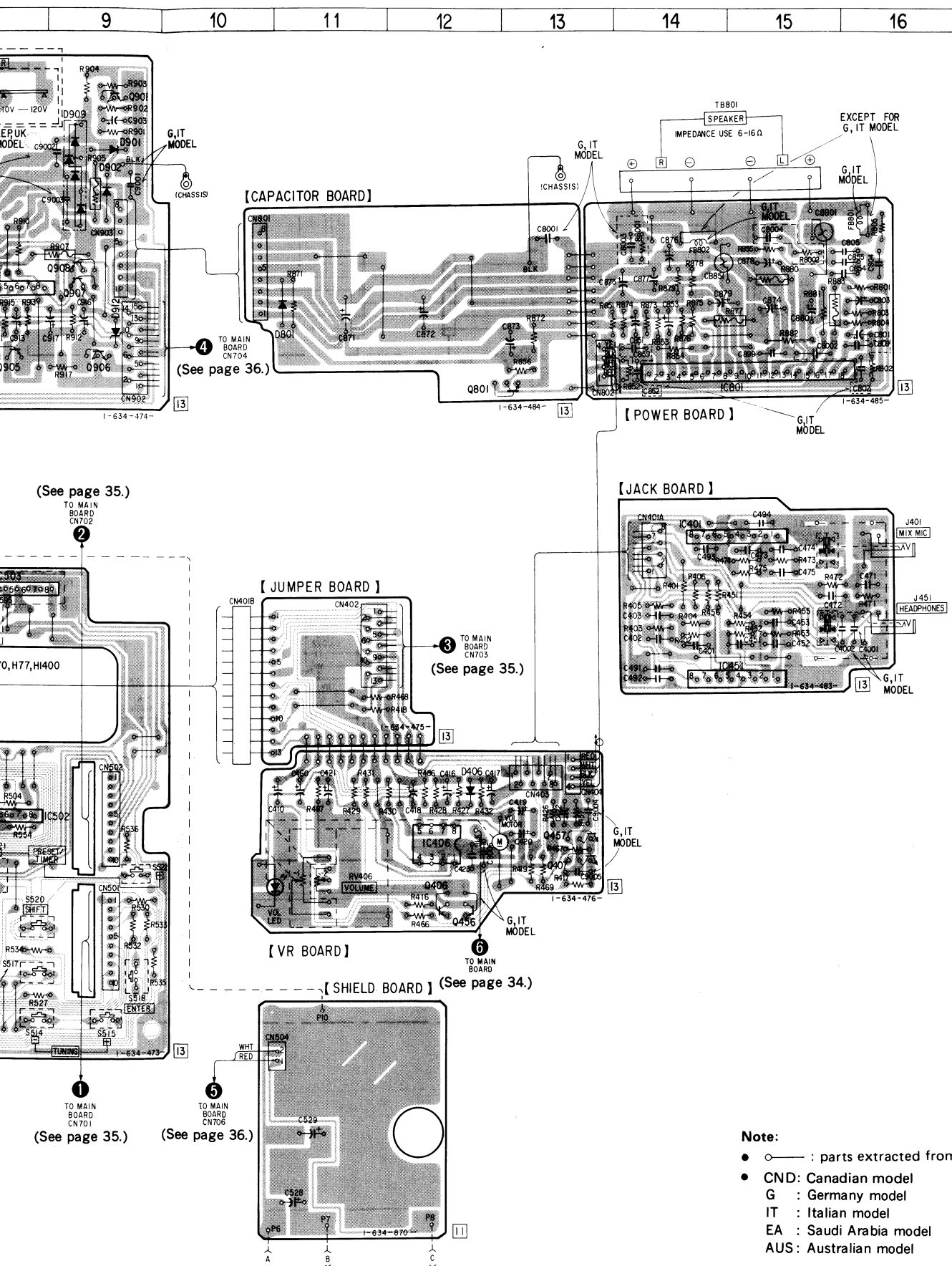
Ref. No.	Location	Ref. No.	Location
D406	G-12	IC451	F-14
D521	G-2	IC501	G-6
D522	F-2	IC502	G-8
D523	E-2	IC503(*4)	E-8
D574	I-3	IC504(*4)	F-4
D576	I-6	IC505	H-5
D577	I-6	IC506	F-2
D578	I-7	IC551	F-5
D579	I-7	IC801	C-15
D580	I-3	IC901	C-8
D581	I-3		
D582	I-3	Q406	H-12
D583	H-3	Q407	H-13
D585(*1)	H-4	Q456	H-12
D588(*2)	H-4	Q457	H-13
D589(*3)	H-3	Q501	H-8
D590(*1)	H-3	Q551	H-7
D591(*4)	G-2	Q571	F-1
D592(*4)	G-2	Q572	G-3
D593(*4)	G-2	Q573	G-7
D594(*4)	G-2	Q574	I-4
D595(*4)	H-2	Q575	G-1
D598	I-6	Q576	I-4
D801	C-11	Q801	C-13
D901	A-9	Q901	A-9
D902	B-9	Q903	C-7
D903	C-5	Q904	C-7
D904	C-6	Q905	C-8
D907	C-7	Q906	C-9
D908	C-6	Q907	C-9
D909	A-9	Q908	C-9
D910	C-7		
D911	D-7		
D912	C-9		
IC401	E-14		
IC406	H-12		

- *1: Used on HCD-H70.
*2: Used on except for IT model.
*3: Used on IT model.
*4: Used on HCD-H70/H77/H1400.

Note:

- : parts extracted from the component side.
- CND: Canadian model
G : Germany model
IT : Italian model
EA : Saudi Arabia model
AUS: Australian model

Inductor Lead Layouts.

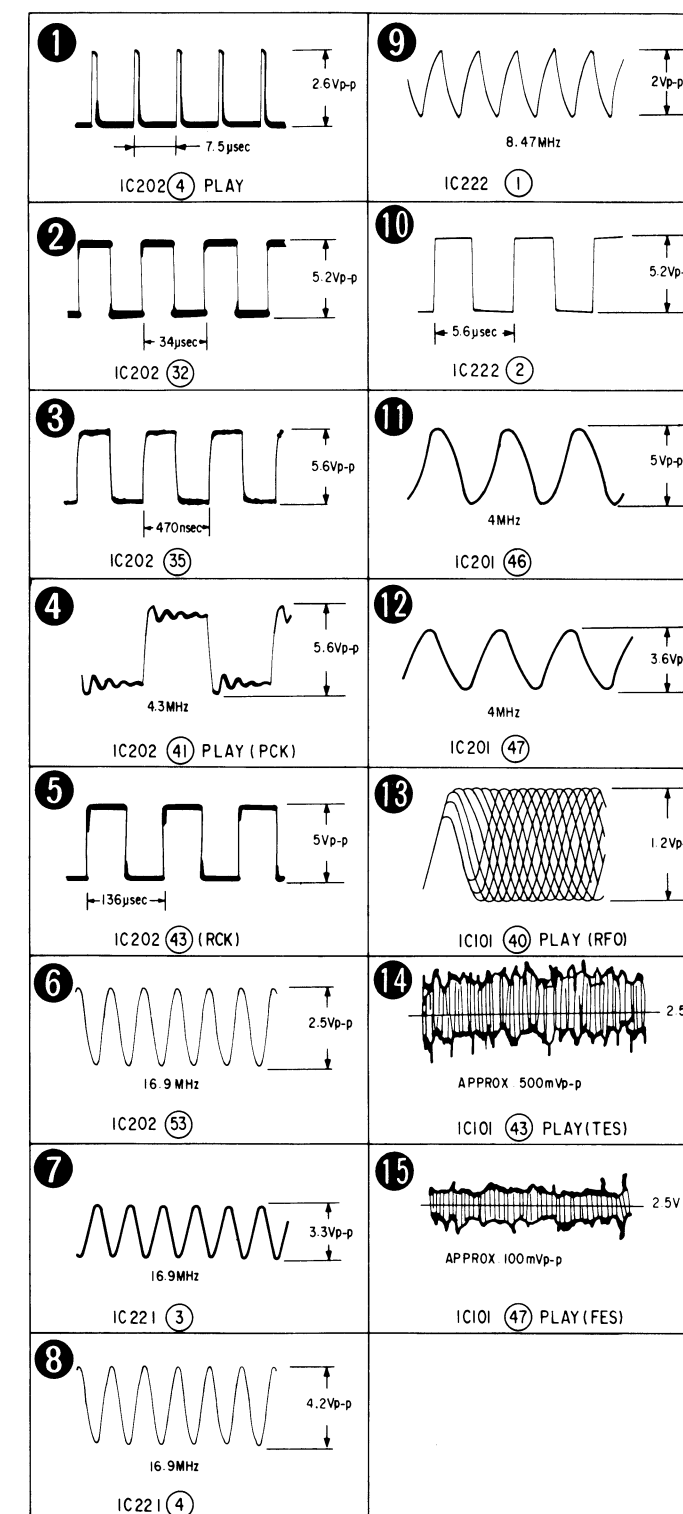


Semiconductor Location

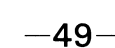
Ref. No.	Location	Ref. No.	Location
D406	G-12	IC451	F-14
D521	G-2	IC501	G-6
D522	F-2	IC502	G-8
D523	E-2	IC503(*4)	E-8
D574	I-3	IC504(*4)	F-4
D576	I-6	IC505	H-5
D577	I-6	IC506	F-2
D578	I-7	IC551	F-5
D579	I-7	IC801	C-15
D580	I-3	IC901	C-8
D581	I-3		
D582	I-3	Q406	H-12
D583	H-3	Q407	H-13
D585(*1)	H-4	Q456	H-12
D588(*2)	H-4	Q457	H-13
D589(*3)	H-3	Q501	H-8
D590(*1)	H-3	Q551	H-7
D591(*4)	G-2	Q571	F-1
D592(*4)	G-2	Q572	G-3
D593(*4)	G-2	Q573	G-7
D594(*4)	G-2	Q574	I-4
D595(*4)	H-2	Q575	G-1
D598	I-6	Q576	I-4
D801	C-11	Q801	C-13
D901	A-9	Q901	A-9
D902	B-9	Q903	C-7
D903	C-5	Q904	C-7
D904	C-6	Q905	C-8
D907	C-7	Q906	C-9
D908	C-6	Q907	C-9
D909	A-9	Q908	C-9
D910	C-7		
D911	D-7		
D912	C-9		
IC401	E-14		
IC406	H-12		

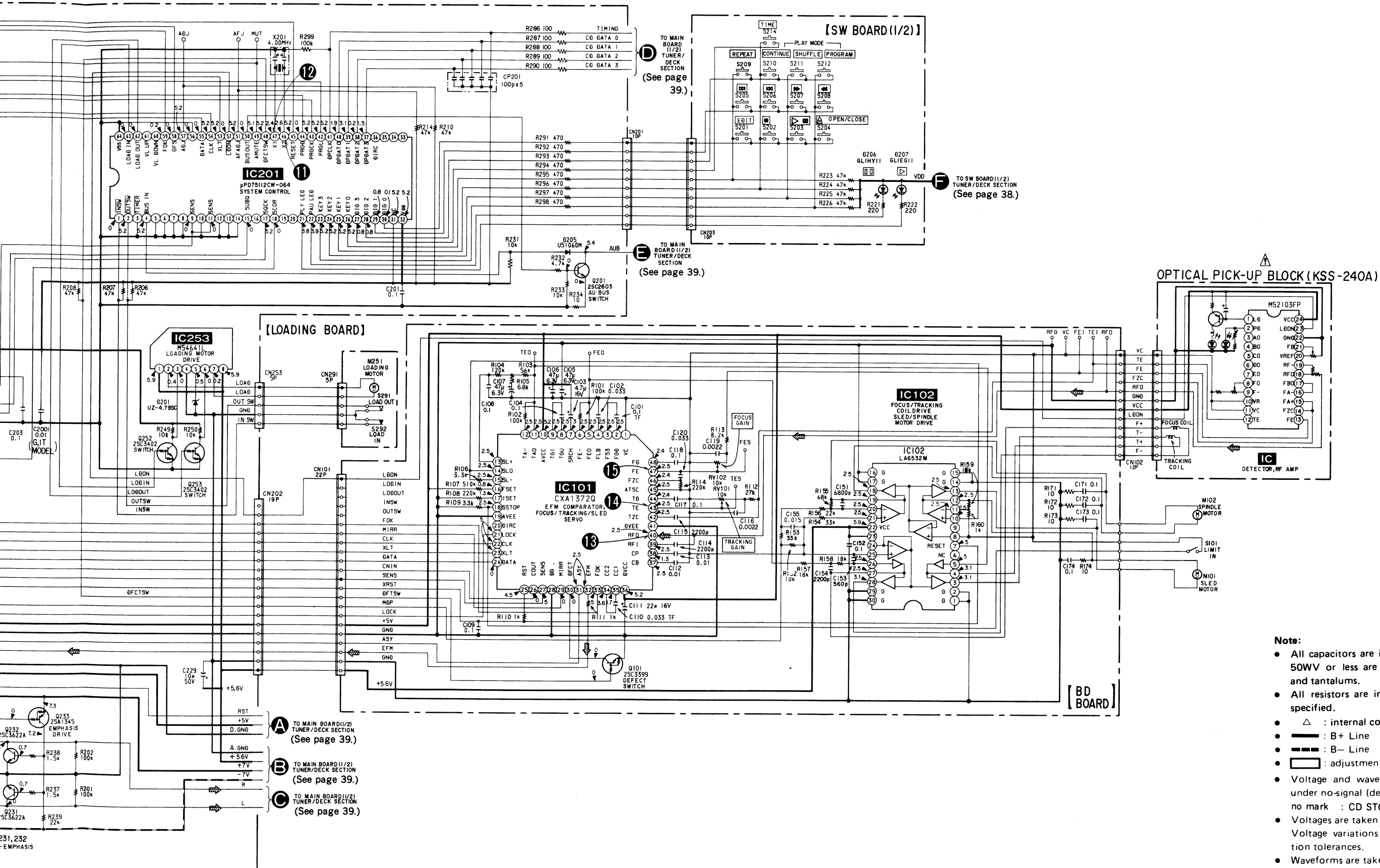
- *1: Used on HCD-H70.
 *2: Used on except for IT model.
 *3: Used on IT model.
 *4: Used on HCD-H70/H77/H1400.

Waveforms



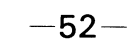
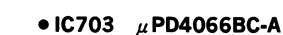
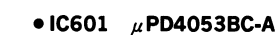
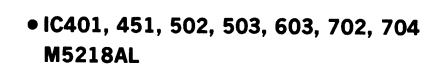
er to page 47 for Waveforms.



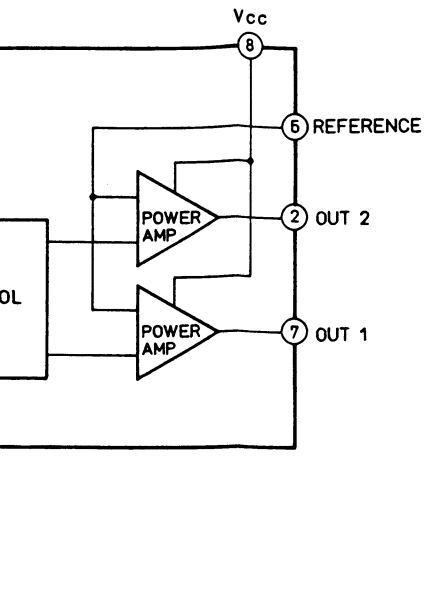
**Note:**

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- — : B+ Line
- - - - : B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : CD STOP
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 \Rightarrow : CD

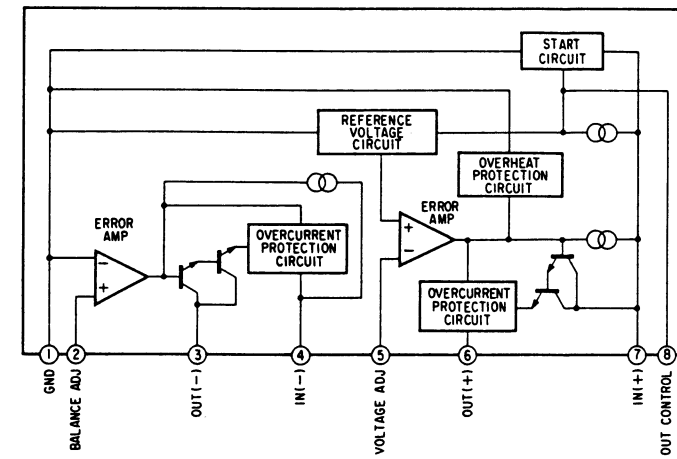
• IC51 TC9217P



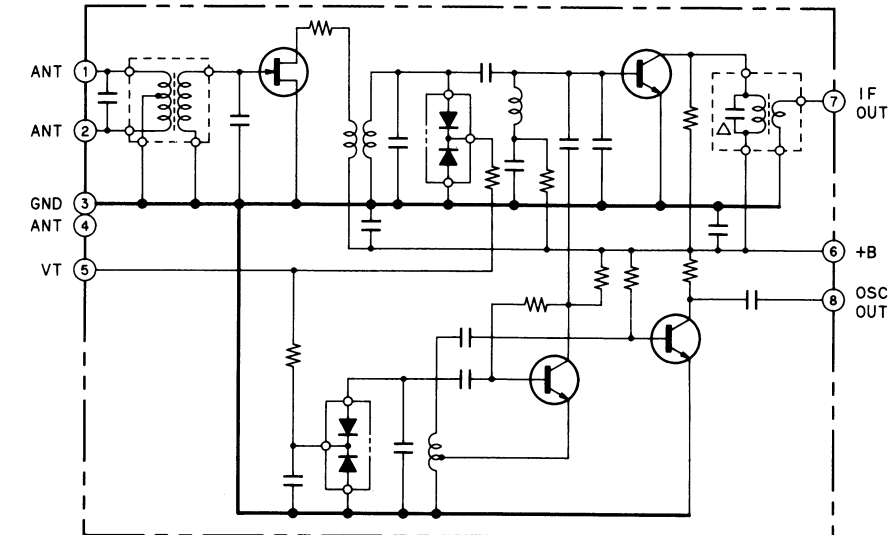
• IC602 CXA1298AP



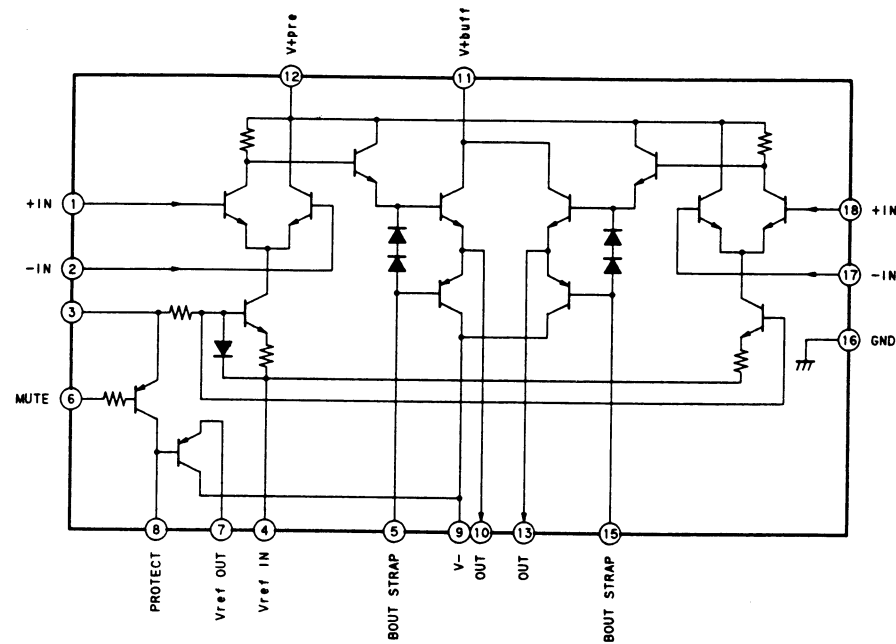
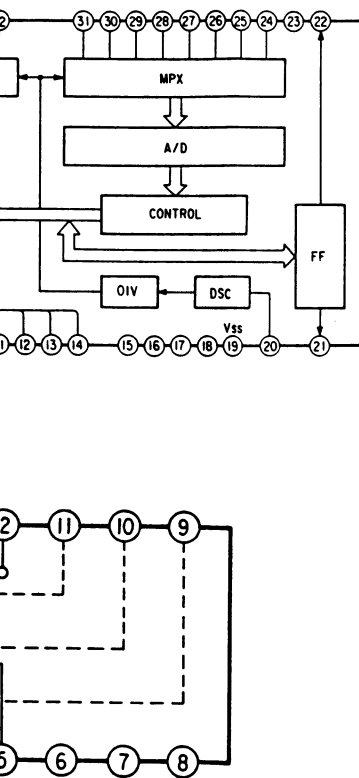
• IC901 M5230L-A



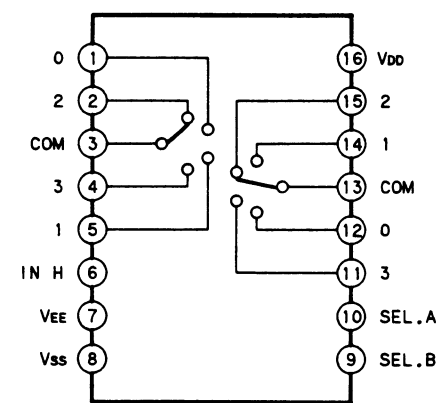
• FE1 FM Front End (AEP, UK, E, EA, AUS)



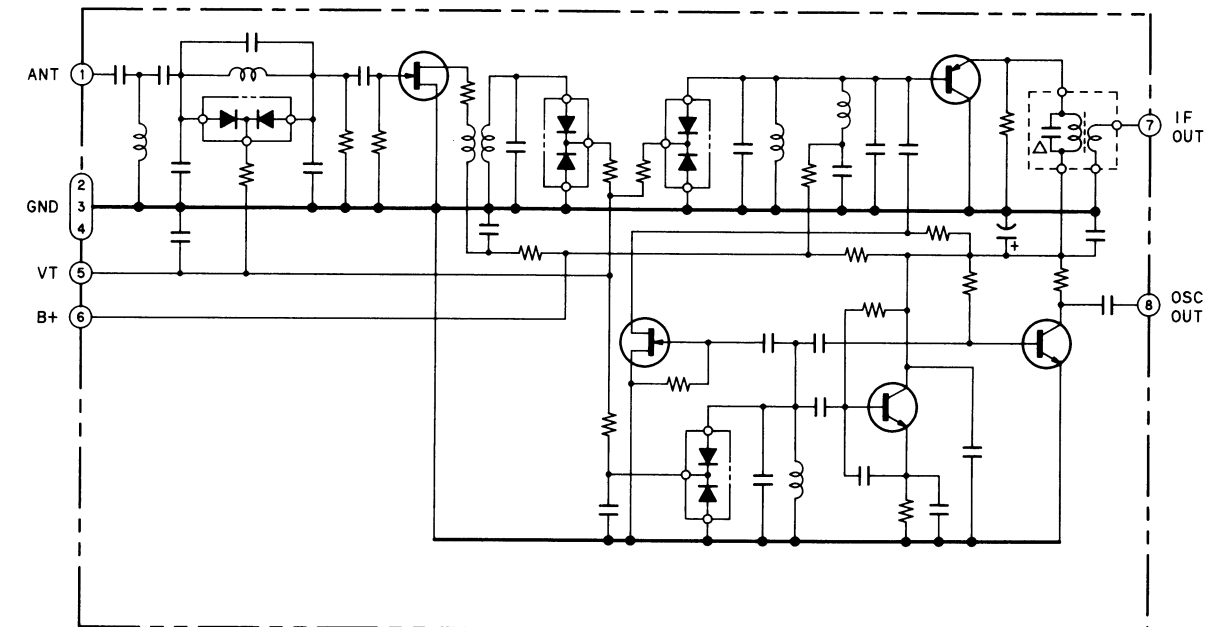
• IC801 STK-4132MK2



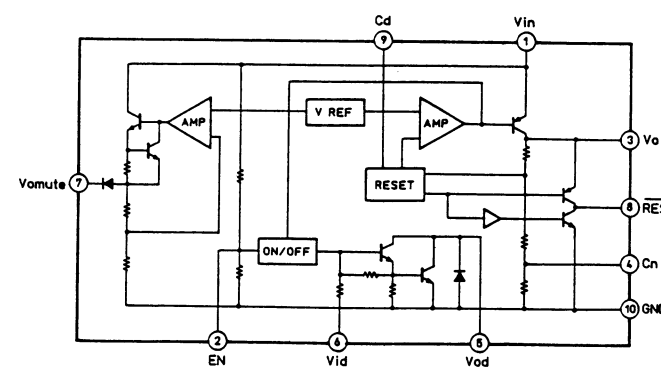
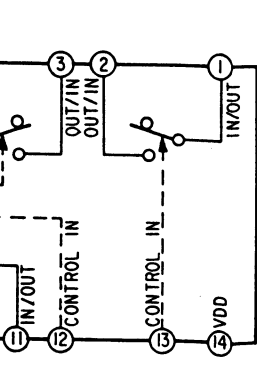
• IC705 M4052BPK



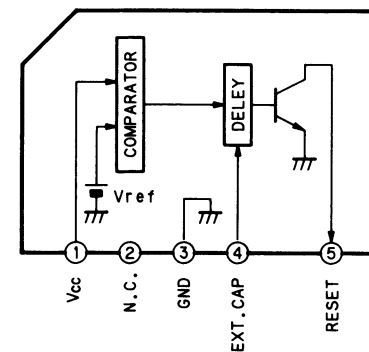
• FE1 FM Front End (G, IT)



• IC999 LA5601



• IC706 M51953BL



6-8. PIN FUNCTIONS

● IC604 Deck Controller (M50964-212SP)

Pin No.	Pin Name	I/O	Symbol	Description																																																
1	V _{CC}		V _{CC}	POWER 5±0.5V																																																
2	AV _{SS}		AV _{SS}	Analog system GND																																																
3	VREF	I	VREF	Analog system reference voltage input																																																
4	D•A	O	D•A	D/A conversion output (Not used : open)																																																
5	PWM	O	PWM	PWM output (Not used : GND)																																																
6	P63	O	AMS	AMS LED indication output																																																
7	P62	O	A FWD	Deck A FWD LED output																																																
8	P61	O	BIAS IV	TYPE IV bias oscillation output																																																
9	P60	O	BIAS II	TYPE II bias oscillation output																																																
10	P47	O	A REV	Deck A RVS LED output																																																
11	P46	O	A REV	Deck A RVS LED output																																																
12	AN5	I	B HALF	Beck B record prevention claw A, B detection input (Analogue) <table><tr><td>Voltage (V)</td><td>1V</td><td>1.9V</td><td>2.8V</td><td>3.9V</td><td>5V</td></tr><tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr><tr><td>Claw A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>Claw B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr></table>	Voltage (V)	1V	1.9V	2.8V	3.9V	5V	Half	ON	ON	ON	ON	OFF	Claw A	OFF	ON	OFF	ON	OFF	Claw B	ON	ON	OFF	OFF	OFF																								
Voltage (V)	1V	1.9V	2.8V	3.9V	5V																																															
Half	ON	ON	ON	ON	OFF																																															
Claw A	OFF	ON	OFF	ON	OFF																																															
Claw B	ON	ON	OFF	OFF	OFF																																															
13	AN4	I	KEY3	KEY input <table><tr><td>Voltage (V)</td><td>0</td><td>0.3</td><td>0.7</td><td>1.2</td><td>1.7</td><td>2.3</td><td>2.8</td><td>3.4</td><td>4.0</td><td>4.5</td><td>5.0</td></tr><tr><td>KEY 1</td><td>B ■</td><td>B ■</td><td>B ■</td><td>B ■</td><td>B ○</td><td>A ◀</td><td>A ▶</td><td></td><td>○ B</td><td>○ C</td><td>OFF</td></tr><tr><td>KEY 2</td><td>A ■</td><td>A ■</td><td>A ▶</td><td>A ◀</td><td></td><td>B ◀</td><td>B ▶</td><td>B ●</td><td>○</td><td>RELAY</td><td>OFF</td></tr><tr><td>KEY 3</td><td>AMS</td><td></td><td>H DUB</td><td>N DUB</td><td>CD SYNC</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Voltage (V)	0	0.3	0.7	1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0	KEY 1	B ■	B ■	B ■	B ■	B ○	A ◀	A ▶		○ B	○ C	OFF	KEY 2	A ■	A ■	A ▶	A ◀		B ◀	B ▶	B ●	○	RELAY	OFF	KEY 3	AMS		H DUB	N DUB	CD SYNC						
Voltage (V)	0	0.3	0.7		1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0																																								
KEY 1	B ■	B ■	B ■		B ■	B ○	A ◀	A ▶		○ B	○ C	OFF																																								
KEY 2	A ■	A ■	A ▶	A ◀		B ◀	B ▶	B ●	○	RELAY	OFF																																									
KEY 3	AMS		H DUB	N DUB	CD SYNC																																															
14	AN3	I	KEY2																																																	
15	AN2	I	KEY1																																																	
16	P41	O	B FWD	Deck B FWD LED output																																																
17	P40	O	B REV	Deck B RVS LED output																																																
18	P37	O	A FWD	Deck A FWD LED output																																																
19	P36	O	B PAUSE	Deck B PAUSE LED output																																																
20	P35	O	B REC	Deck B REC LED output																																																
21	P34	O	DOLBY B/C	Dolby B/C output																																																
22	P33	O	DOLBY ON/OFF	Dolby ON/OFF output																																																
23	P32	I	SIRCS	SIRCS input or AUDIO BUS reverse input																																																
24	P31	O	70/120	Playback EQ output for playing deck																																																
25	P30	O	AUB OUT	AUDIO BUS output																																																
26	INT1	I	AUB IN	AUDIO BUS normal input																																																
27	CNVSS		CNVSS	GND																																																
28	RESET	I	RESET	Microcomputer reset input																																																
29	XIN	I	XIN	Clock input (4MHz)																																																
30	X _o	O	X _o	Clock output (4MHz)																																																
31	Φ	O	Φ	Not used (open)																																																

Pin No.	Pin Name	I/O	Symbol	Description
32	V _{SS}		V _{SS}	GND
33	P57	I	TEST	Electrical adjustment test mode setting
34	P56	I	TYPE IV	TYPE IV switch input
35	P55	I	B70/120	Deck B TYPE II switch input
36	P54	I	B SHUT	Deck B Reel table signal input
37	P53	I	A70/120	Deck A TYPE II switch input
38	P52	I	A SHUT	Deck B Reel table signal input
39	P51	I	A HALF	Deck A Half switch input
40	P50	I	AMS IN	AMS signal input
41	P17	O	M MUTE	Meter mute output
42	P16	O	L MUTE	Line mute output
43	P15	O	PASS	PASS AMP change output
44	P14	O	REC/PB	Dolby IC REC/PB select output
45	P13	O	AMS/BS	AMS AMP characteristics change ouptut
46	P12	O	AMS A/B	AMS AMP input Deck A/B select output
47	P11	O	SEL A/B	Dolby IC PB input Deck A/B select output
48	P10	O	BIAS I	TYPE I bias oscillation output
49	P07	O	RELAY	REC/PB change relay output
50	P06	O	PMB	Deck B plunger hold output
51	P05	O	KICK B	Deck B plunger kick output
52	P04	O	PMA	A Deck A plunger hold output
53	P03	O	KICK A	Deck A plunger kick output
54	P02	O	B H/L	Deck B capstan motor speed select
55	P01	O	A H/L	Deck A capstan motor speed select
56	P00	O	M ON/OFF	Capstan motor ON/OFF
57	P27	O	REC MUTE	REC MUTE output
58	P26	O	B SCHMITT	Deck B reel table schmitt output
59	P25	O	A SCHMITT	Deck A reel table schmitt output
60	P24	O	H DUB	High Speed Dubbing LED output
61	P23	O	N DUB	Normal Speed Dubbing LED output
62	P22	O	CD DUB	Auto CD Synchro LED output
63	P21	I	AMS AVIRABLE	Deck A PAUSE LED output
64	P20	O	SIRCS/AUB	SIRCS/AUDIO BUS mode select

[TEST MODE]

When making pin ③ low (connect TP1 to ground with jumper wire), following function operates.

1. Sourec monitor
Release the line mute while recording.

2. High speed p
On recording
3. Record mem
Using DIREC

● IC505 Display

Pin No.	Pin N
1	S
2	S
3	S
4	S
5	IN
6	SO
7	SO
8	PO
9	IN
10	IN
11	P1
12	P1
13	P2
14	P2
15	P2
16	P2
17	P3
18	P3
19	P3
20	P3
21	P6
22	P6
23	P6
24	P6
25	P4
26	P4
27	P4
28	P4
29	PF
30	X
31	X
32	V
33	XT
34	XT
35	P5
36	P5
37	P5
38	P5
39	RES
40	T
41	T

2. High speed playback
- On recording, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.
3. Record memory stop
- Using DIRECTION MODE switch ⇄, returns to the recording start point and stops or plays.

● IC505 Display Control (μPD75212ACW-273)

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
1	S3	O	H	Segment, keyscan output terminals	Low
2	S2				
3	S1				
4	S0				
5	INT4	I	L	HOLD input	input
6	SCK	O	—	CLOCK (TC9217P T-BUS)	
7	SO	I/O	—	DATA (TC9217P T-BUS)	
8	PO3	I	L	SIGNAL input	
9	INT0	I	L	AUDIO-BUS input	input
10	INT1	I	Down	CD display data, timng	
11	P12	I	L	Remote input	
12	P13	I	L	STEREO input	
13	P20	I	—	CD display data	input
14	P21				
15	P22				
16	P23				
17	P30	I	L	DUAL 2 input	input
18	P31	I	L	DUAL 1 input	
19	P32	O	L	POWER port	
20	P33	O	L	MUTING	
21	P60	I	H	Keyscan input	input
22	P61				
23	P62				
24	P63				
25	P40	O	—	FUNCTION A output	Low
26	P41	O	—	FUNCTION B output	
27	P42	O	H	AUDIO-BUS output	
28	P43	O	L	PERIOD (TC9217P T-BUS)	
29	PP0	—	—	Not used (open)	—
30	X1	—	—	Main system clock 4.19MHz	—
31	X2				
32	V _{ss}	—	—	GND terminal (0V)	—
33	XT1	—	—	Sub system clock 32.768kHz	—
34	XT2				
35	P50	O	L	DBFB	Low
36	P51	O	L	SURROUND	
37	P52	O	L	Volume DOWN	
38	P53	O	L	Volume UP	
39	RESET	I	L	System reset input terminal	—
40	T0	O	H	Digit output	Low
41	T1				

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
42	T2	O	H	Digit output	Low
43	T3				
44	T4				
45	T5				
46	T6				
47	T7				
48	T8				
49	T9	O	—	Not used (open)	Low
50	S15	O	H	Segment output	Low
51	S14				
52	S13				
53	S12				
54	S11	O	H	Segment output, specification distinction diode output	Low
55	S10				
56	V _{LOAD}	—	—	Pull-down resistor connect terminal of FIP driver	—
57	V _{PRE}	—	—	Power supply terminal of FIP driver output buffer	—
58	S9	O	H	Segment output	Low
59	S8				
60	S7				
61	S6				
62	S5	O	H	Segment, keyscan output teminal	Low
63	S4				
64	V _{DD}	—	—	Power supply terminal (5V)	—

[KEY, DIODE MATRIX]

	Key						Diode	
	S5	S4	S3	S2	S1	S0	S10	S11
P60	CLOCK	TIMER CONTROL	VIDEO	DUAL	STATION UP	STATION DOWN	TIMER FUNCTION	A
P61	DISPLAY	SLEEP	TUNER	AUTO/MANUAL	SHIFT	ENTER	VIDEO/PHONO	B
P62	POWER	TIMER SET	CD	SURROUND	BAND	MERORY	IF+50kHz	C
P63	—	—	TAPE	DBFB	TUNING UP	TUNING DOWN	IF-50kHz	—

- 1) Pressing the key twice is not allowed. (First pressing is preceded)
- 2) The remote control precedes the input with the pey.
- 3) Input the diode in resetting and in releasing HOLD.

● IC201 CD Controller (μ PD75112CW-064)

Pin No.	Pin Name	I/O	Description
1	INSW	I	Disk tray clamp-end input
2	OUTSW	I	Disk tray open-end input
3	(TIMER)	I	Timer start input
4	BSIN	I	Audio bus input
5	Not Used	I	GND
6	Not Used	I	GND
7	Not Used	I	GND
8	Not Used	I	GND
9	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
10	Not Used	I	GND
11	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
12	Not Used	I	GND
13	Not Used	I	GND
14	Not Used	I	GND
15	SUBQ	I	Q data serial input from CXD2500Q
16	Not Used	O	OPEN
17	SQCLK	O	Sub-code Q data read-in clock output for CXD2500Q
18	SCOR	I	Sub-code synchro S0 and S1 detect input
19	Not Used	O	OPEN
20	Not Used	O	OPEN
21	PLAYL	O	Play LED ON/OFF output
22	PAUSL	O	Pause LED ON/OFF output
23	KEY3	I	Key data input
24	KEY2	I	Key data input
25	KEY1	I	Key data input
26	KEY0	I	Key data input
27	DG3	O	Key-scan digit output
28	DG2	O	Key-scan digit output
29	DG1	O	Key-scan digit output
30	DG0	O	Key-scan digit output
31	Not Used	I	+5V
32	VDD	I	+5V
33	Not Used	O	OPEN
34	Not Used	O	OPEN
35	Not Used	O	OPEN
36	Not Used	O	On time 1 track jump, tracking drive is inversed output for CXA1372Q
37	DPDAT3	O	Display data output for tuner amp micon
38	DPDAT2	O	Display data output for tuner amp micon
39	DPDAT1	O	Display data output for tuner amp micon
40	DPDAT0	O	Display data output for tuner amp micon
41	DPCLK	O	Display data transmission clock output for tuner amp micon
42	PRGL	O	Serial data latch pulse output for digital filter CXD2551P
43	PRGCK	O	Serial clock output for digital filter CXD2551P
44	PRGD	O	Serial clock output for digital filter CXD2551P

Pin No.	Pin Name	I/O	Description
45	RESET	I	System reset input terminal (LOW ACTIVE)
46	X2	I	System clock input 4.19MHz
47	X1	I	System clock input 4.19MHz
48	DFCTSW	O	From focus in till spindle kick is ON except then is OFF.
49	AMUTE	O	Muting ON/OFF output
50	BSOUT	O	Audio bus output
51	AFADJ	I	Test mode input, and on time POWER "L" is test move ment of every kind
52	LDON	O	Laser diode ON/OFF output
53	XLT	O	Serial data latch pulse output for CXD2500Q
54	CLK	O	Serial data output for CXD2500Q
55	DATA	O	Serial data output for CXD2500Q
56	Not Used	I	GND
57	ADJ	I	Test mode input, "L" is GFS no check.
58	GFS	I	GFS OK/NO Good input
59	FOK	I	Focus OK NO Good input
60	Not Used	O	OPEN
61	Not Used	O	OPEN
62	LODOUT	O	Disc tray loading-out output
63	LODIN	O	Disc tray loading-in output
64	VSS	I	GND

SECTION 7 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- XX, -X mean standardized parts, so they may have some differences from the original one.



- Color Indication of Appearance Parts
Example:

KNOB, BALANCE (WHITE)...(RED)

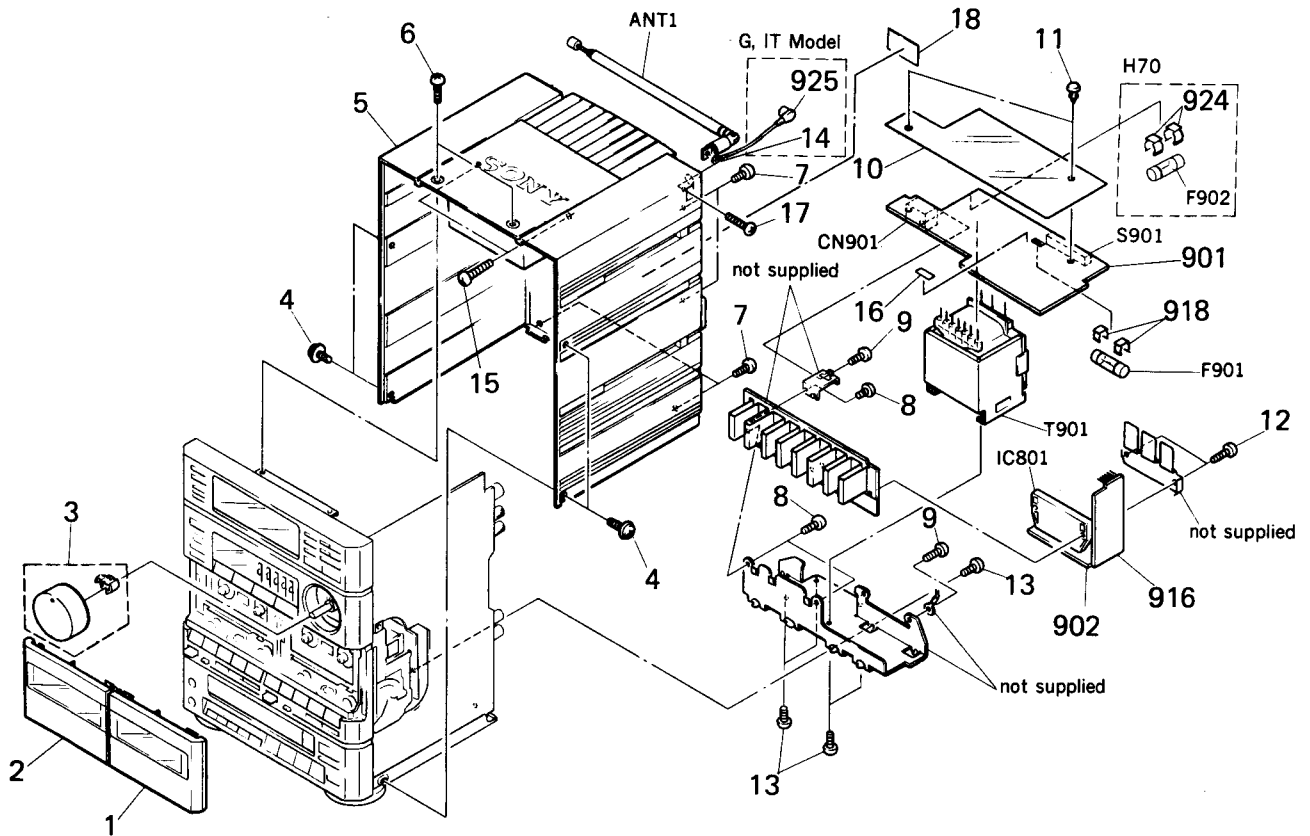
Parts Color Cabinet's Color

- G : Germany model
- IT : Italian model
- EA : Saudi Arabia model
- AUS: Australian model










- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

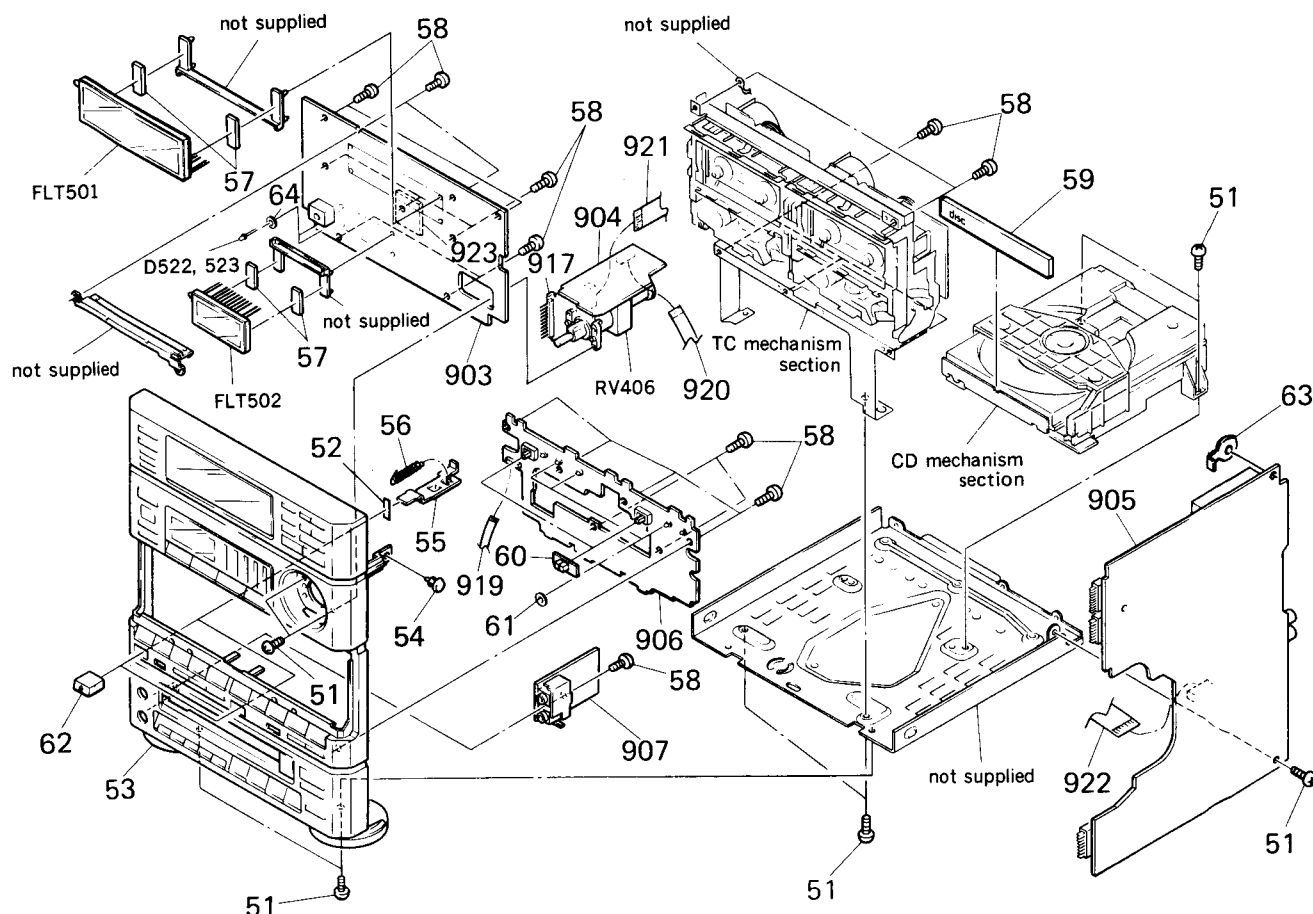
7-1. CASE, POWER SECTION



Ref. No.	Part No.	Description	Remark
1	X-4941-495-1	LID (B) ASSY, CASSETTE	
2	X-4941-496-1	LID (A) ASSY, CASSETTE	
3	X-4936-803-1	KNOB (VOLUME) ASSY	
4	3-704-366-01	SCREW (CASE) (M3X8)	
5	X-4936-802-1	CASE ASSY (H66, H77)	
5	X-4936-804-1	CASE ASSY (H70)	
5	4-936-804-11	CASE ASSY (H1200, H1400)	
6	7-682-549-09	SCREW +BVTT 3X10 (S)	
7	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
9	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
10	* 4-936-816-01	COVER (INSULATING)	
11	4-812-134-31	RIVET NYLON, 3.5	
12	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
13	7-682-547-04	SCREW +BVTT 3X6 (S)	
14	7-623-508-01	EARTH, LUG 3 (G, IT)	
15	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S (H66, H70, H77)	
16	3-701-947-10	LABEL (T800MA), FUSE (H66, H1200)	
17	7-682-549-09	SCREW +BVTT 3X10 (S) (H66, H70, H77)	
18	* 4-941-548-01	LABEL, CLASS 1	

Ref. No.	Part No.	Description	Remark
901	* 1-634-474-11	TRANSFORMER BOARD	
902	* 1-634-485-11	POWER BOARD	
916	* 1-634-484-11	CAPACITOR BOARD	
918	* 1-533-213-31	HOLDER, FUSE	
924	* 1-533-213-31	HOLDER, FUSE (H70)	
925	* 1-562-908-11	CONNECTOR, FEMALE (NO SHIELD) (G, IT)	
ANT1	1-501-270-00	ANTENNA, TELESCOPIC (H66, H70, H77)	
CN901	 1-526-930-11	INLET, AC (~AC IN) (E)	
CN901	 1-526-931-11	INLET, AC (~AC IN) (EXCEPT E)	
F901	 1-532-078-00	FUSE (1A) (EA, H77, H1400)	
F901	 1-532-215-00	FUSE, TIME-LAG (0.8A) (E, AUS, H66, H1200)	
F902	 1-532-259-11	FUSE, GLASS TUBE (1.6A) (H70)	
IC801	8-749-920-13	IC STK-4132MK2	
S901	 1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (H70)	
T901	 1-450-462-11	TRANSFORMER, POWER (H77, H1400)	
T901	 1-450-463-11	TRANSFORMER, POWER (H66, H1200)	
T901	 1-450-464-11	TRANSFORMER, POWER (H70)	

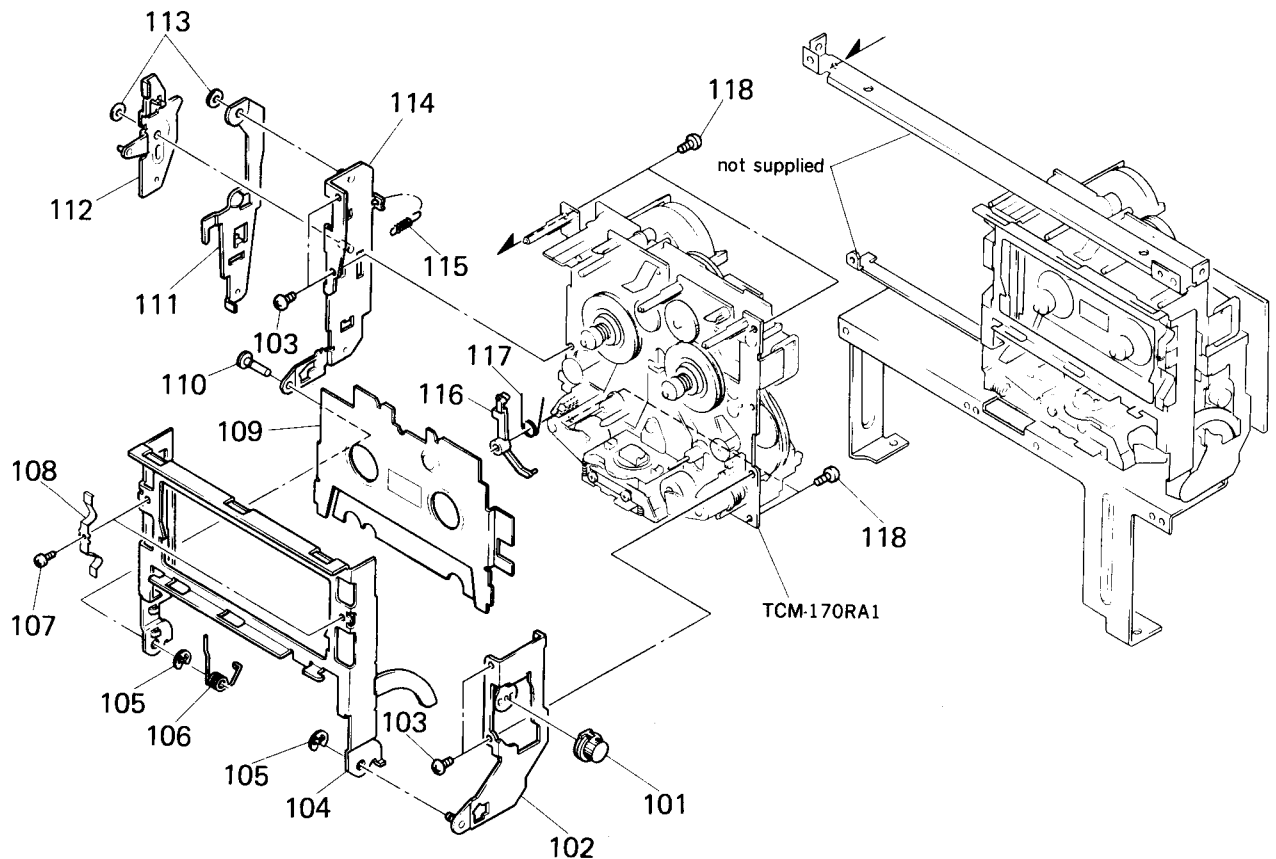
7-2. FRONT PANEL, MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark
51	7-682-547-04	SCREW +8VTT 3X6 (S)	
52	3-831-441-11	CUSHION, CABINET (UPPER)	
53	X-4941-498-1	PANEL ASSY. FRONT (H77)	
53	X-4941-499-1	PANEL ASSY. FRONT (H66)	
53	X-4941-500-1	PANEL ASSY. FRONT (H1200)	
53	X-4941-505-1	PANEL ASSY. FRONT (H1400)	
53	X-4941-508-1	PANEL ASSY. FRONT (H70)	
54	4-812-134-31	RIVET NYLON, 3.5	
55	* 4-936-807-01	SLIDER (EJECT) (B) (DECK B)	
55	* 4-936-808-01	SLIDER (EJECT) (A) (DECK A)	
56	3-489-099-11	SPRING, TENSION	
57	* 4-932-810-11	CUSHION (FL)	
58	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
59	4-936-833-11	PANEL, LOADING	
60	3-349-054-01	KNOB (SLIDE)	
61	3-831-441-XX	CUSHION, BLIND	
62	3-349-055-01	BUTTON (EJECT)	
63	* 4-925-530-01	PLATE, GROUND	
64	3-350-679-11	WASHER, FIBER	

Ref. No.	Part No.	Description	Remark
903	* A-4341-540-A	DISPLAY BOARD, COMPLETE (H66:AEP, H1200)	
903	* A-4341-541-A	DISPLAY BOARD, COMPLETE (H66:G)	
903	* A-4341-543-A	DISPLAY BOARD, COMPLETE (H66:IT)	
903	* A-4341-545-A	DISPLAY BOARD, COMPLETE (H70)	
903	* A-4341-546-A	DISPLAY BOARD, COMPLETE (H77:AEP, H1400)	
903	* A-4341-548-A	DISPLAY BOARD, COMPLETE (H77:IT)	
903	* A-4341-549-A	DISPLAY BOARD, COMPLETE (H77:G)	
904	* 1-634-476-11	VR BOARD	
905	* A-4345-098-A	MAIN BOARD, COMPLETE (AEP, UK)	
905	* A-4345-099-A	MAIN BOARD, COMPLETE (G, IT)	
905	* A-4345-100-A	MAIN BOARD, COMPLETE (H70)	
906	* 1-634-477-11	SW BOARD	
907	* 1-634-483-11	JACK BOARD	
917	* 1-634-475-11	JUMPER BOARD	
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)	
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)	
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)	
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
923	* 1-634-870-11	SHIELD BOARD	
D522	8-719-313-39	DIODE SEL1910DM-LC05-CD	
D523	8-719-313-39	DIODE SEL1910DM-LC05-CD	
FLT501	1-519-577-11	INDICATOR TUBE, FLUORESCENT	
FLT502	1-519-578-11	INDICATOR TUBE, FLUORESCENT	(H70, H77, H1400)
RV406	1-238-865-11	RES, VAR, CARBON (MOTOR) 100K X 2 (VOLUME) (INCLUDING VOL LED)	

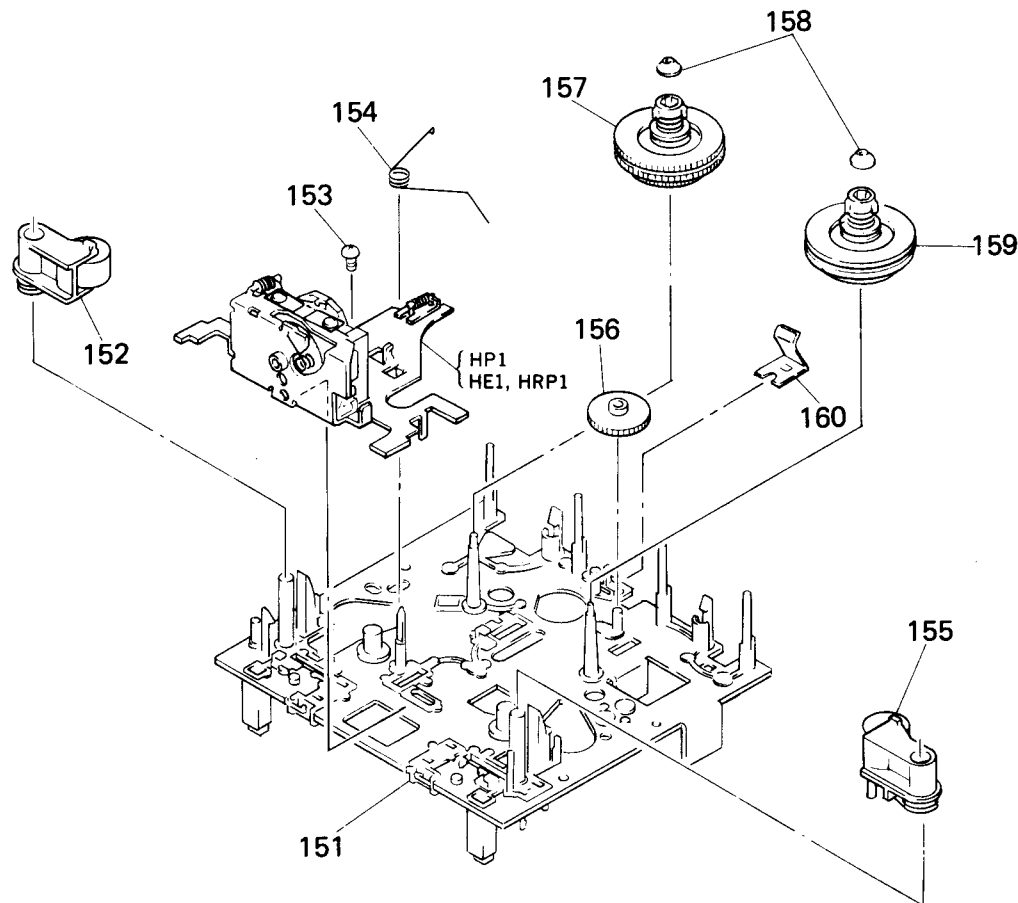
7-3. MD CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	X-3340-185-1	GEAR (DAMPER) ASSY	
102	* X-3332-494-1	BRACKET (R) ASSY	
103	7-621-773-86	SCREW +BVT 2.6X4 (S)	
104	* 3-340-150-01	HOLDER, CASSETTE	
105	7-624-105-04	RETAINING, RING E-2.3	
106	3-346-364-01	SPRING (LOADING), TORSION	
107	7-621-255-15	SCREW +PTT 2X3 (S)	
108	3-354-908-01	SPRING (CASSETTE RETAINER)	
109	* 3-340-123-01	RETAINER, CASSETTE	

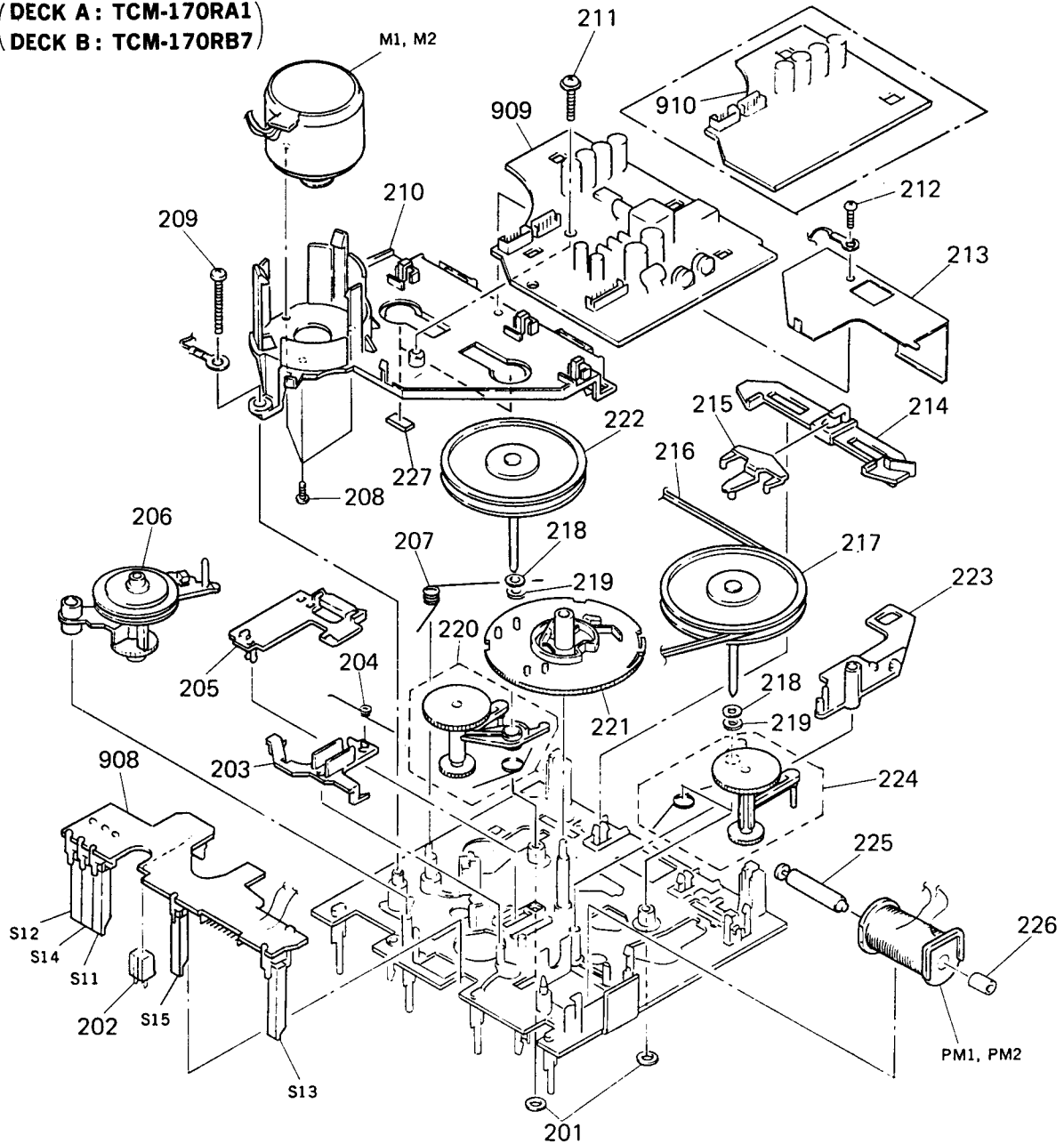
Ref. No.	Part No.	Description	Remark
110	* 3-346-334-01	SHAFT (HOLDER FITTING LEFT)	
111	* 3-340-142-01	LEVER (EJECT)	
112	* X-3332-465-1	LEVER (LOCK) ASSY	
113	3-558-708-21	WASHER, STOPPER	
114	* X-3332-466-1	BRACKET (LEFT) ASSY	
115	3-343-474-01	SPRING, TENSION	
116	3-343-476-01	LEVER (EJECT SAFETY LEVER)	
117	3-343-477-01	SPRING, TORSION (EJECT SAFETY)	
118	7-621-770-67	SCREW +PTT 2.6X6 (S)	

7-4. MECHANISM DECK SECTION (1)
(DECK A: TCM-170RA1)
(DECK B: TCM-170RB7)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3343-439-1	CHASSIS ASSY, MECHANICAL		158	3-343-439-01	CAP (REEL TABLE)	
152	X-3343-456-1	LEVER (PINCH R) ASSY		159	X-3343-401-1	TABLE ASSY, REEL	
153	7-621-773-86	SCREW +BVT 2.6X4 (S)		160	3-343-420-01	SPRING, LEAF	
154	3-343-401-01	SPRING, TORSION					
155	X-3343-455-1	LEVER (PINCH F) ASSY		HE1 }	A-2003-504-A	CHASSIS ASSY, HEAD	
156	3-343-411-01	GEAR (FF GEAR)		HRP1 }		(PB/REC/ERASE) (DECK B)	
157	X-3343-415-1	TABLE (REV) ASSY, REEL		HP1	A-2003-503-A	PC BOARD ASSY, HEAD (PB) (DECK A)	

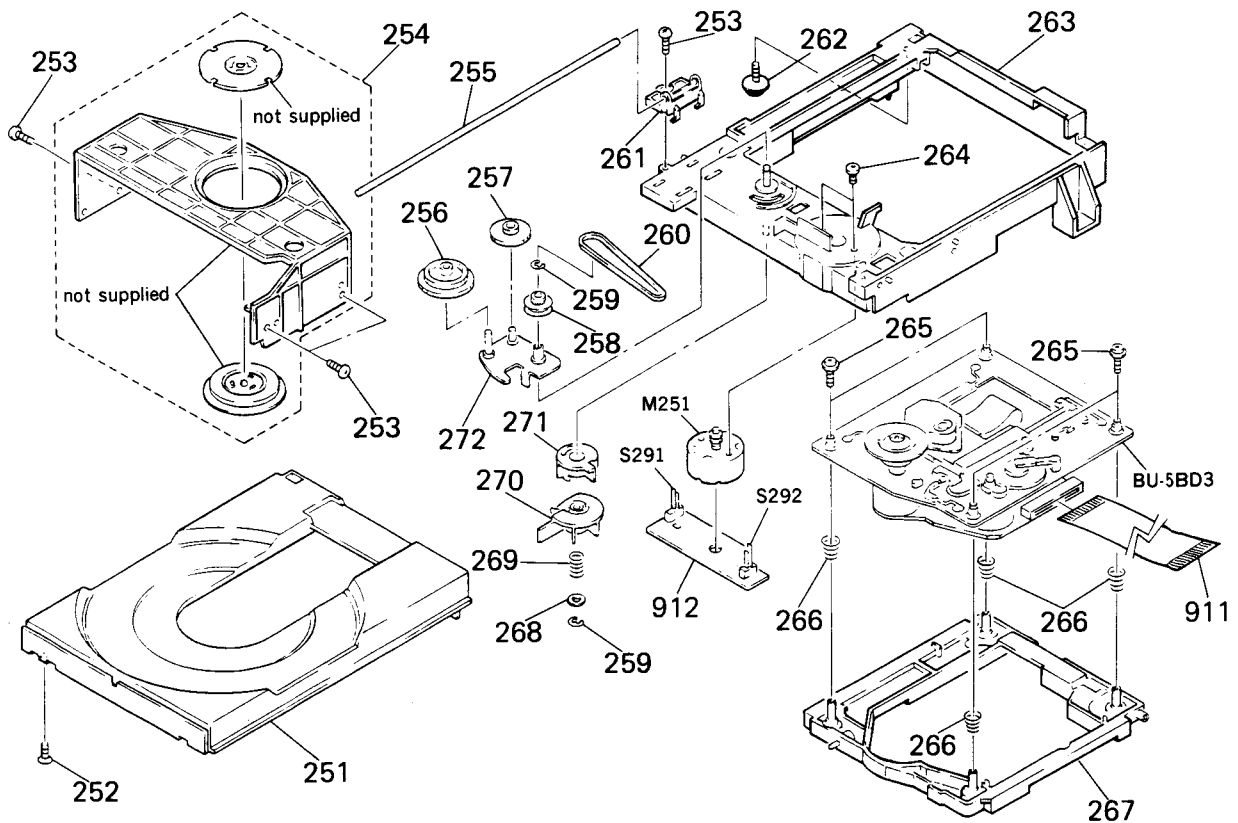
7-5. MECHANISM DECK SECTION (2)

(DECK A: TCM-170RA1)
(DECK B: TCM-170RB7)

Ref. No.	Part No.	Description	Remark
201	3-343-473-01	WASHER, NYLON	
202	3-343-419-01	HOLDER (S SENSOR A)	
203	3-343-453-01	SLIDER (BRAKE PLATE)	
204	3-343-482-01	SPRING, TORSION	
205	3-343-461-01	SLIDER	
206	X-3343-414-1	LEVER (FR ARM) ASSY	
207	3-343-430-01	SPRING, TORSION	
208	7-627-556-28	SCREW +P 2.6X3.5	
209	3-355-801-01	SCREW (BTP 2X18)	
210	* X-3343-407-1	BASE (THRUST RETAINER) ASSY	
211	3-343-404-01	SCREW (PTPWH 2X12)	
212	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
213	3-343-480-01	PLATE, SHIELD	
214	3-343-457-01	SLIDER (REVERSE SLIDER)	
215	3-343-462-01	LEVER	
216	3-343-816-00	BELT (CAPSTAN BELT SQUARE)	
217	X-3343-411-6	FLYWHEEL COMPLETE ASSY	
218	4-605-835-11	WASHER (2.6), POLYSLIDER	
219	3-307-482-00	WASHER, LUMILER	
220	X-3343-454-1	LEVER (TU-R) ASSY	
221	3-343-470-01	GEAR (CAM GEAR)	

Ref. No.	Part No.	Description	Remark
222	X-3343-416-7	FLYWHEEL (REV) COMPLETE ASSY	
223	3-343-493-01	LEVER (PM LEVER)	
224	X-3343-453-1	LEVER (TU-F) ASSY	
225	* 3-343-425-01	ARBOR (MOVABLE IRON ARBOR), IRON	
226	* 3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
227	9-911-863-XX	SPACER (THRUST RETAINER) (DECK A)	
908	* 1-624-148-11	LEAF SW (A) BOARD (DECK A)	
908	* 1-624-148-11	LEAF SW (B) BOARD (DECK B)	
909	* 1-624-146-11	MD-B BOARD (DECK B)	
910	* 1-624-147-11	MD-A BOARD (DECK A)	
M1	X-3343-447-1	MOTOR ASSY (DECK A)	
M2	X-3343-447-1	MOTOR ASSY (DECK B)	
PM1	1-454-456-11	SOLENOID, PLUNGER (DECK A)	
PM2	1-454-456-11	SOLENOID, PLUNGER (DECK B)	
S11	1-571-281-21	SWITCH, LEAF (HALF)	
S12	1-571-281-21	SWITCH, LEAF (REC (A)) (DECK B)	
S13	1-571-281-21	SWITCH, LEAF (REC (B)) (DECK B)	
S14	1-571-281-21	SWITCH, LEAF (CrO2)	
S15	1-571-281-21	SWITCH, LEAF (DECK B)	

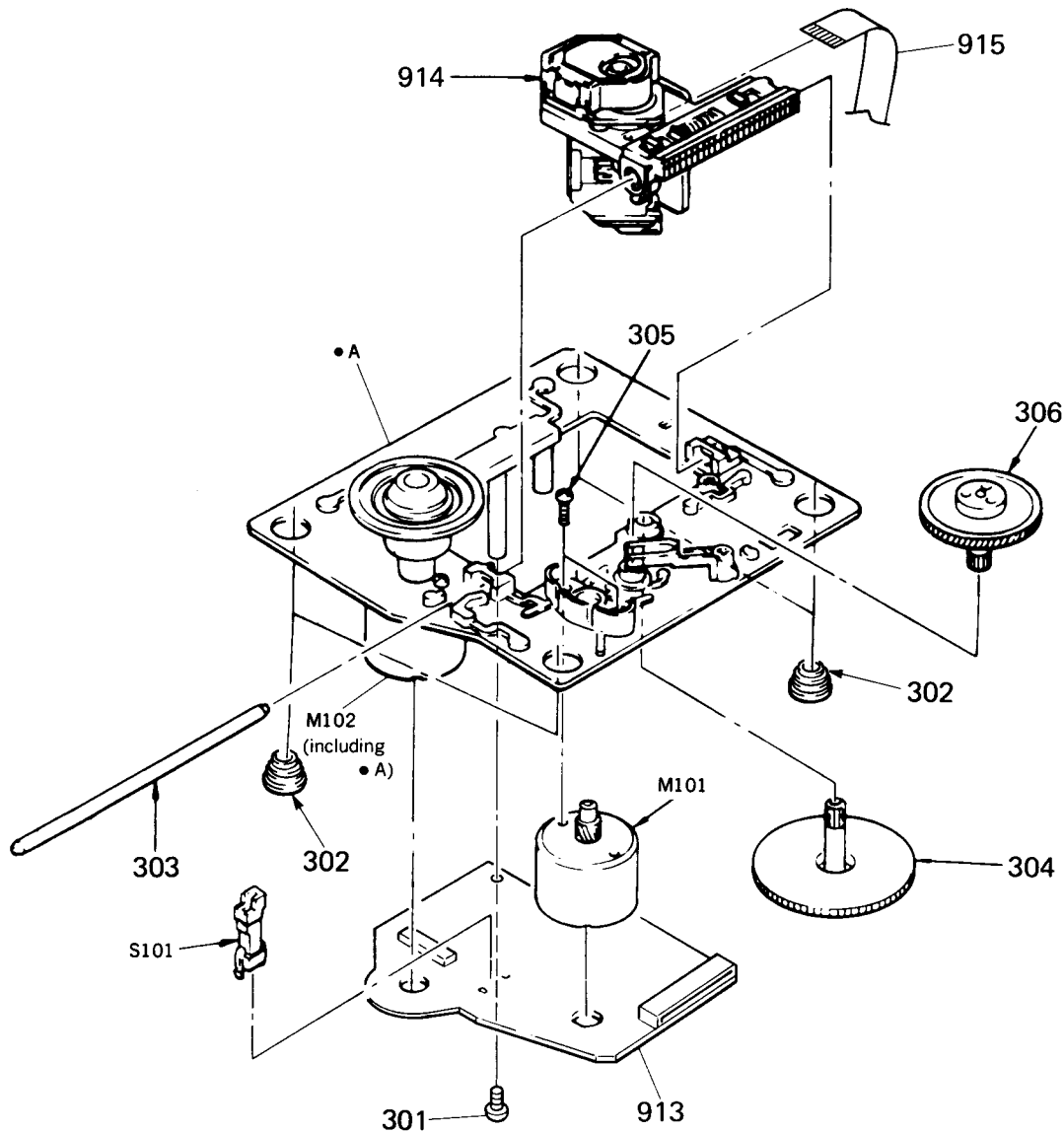
7-6. CD SECTION (1) (CDM13A-5BD3)



Ref. No.	Part No.	Description	Remark
251	4-929-732-01	TABLE, DISK	
252	7-685-234-19	SCREW +KTP 2.6X8 TYPE2 NON-SLIT	
253	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
254	A-4604-219-A	HOLDER (MG) ASSY	
255	4-929-764-01	SHAFT (TABLE GUIDE)	
256	4-927-620-01	GEAR (P)	
257	4-927-628-01	GEAR (C)	
258	4-927-724-01	PULLEY (B)	
259	7-624-105-04	STOP RING 2.3, TYPE-E	
260	4-927-649-01	BELT	
261	4-929-723-01	GUIDE (T)	
262	* 4-917-583-21	BRACKET, YOKE	
263	X-4929-709-2	CHASSIS (MD) ASSY	

Ref. No.	Part No.	Description	Remark
264	7-621-775-10	SCREW +B 2.6X4	
265	4-933-134-01	SCREW (+PTPH M2.6X6)	
266	4-917-541-01	SPRING (B)	
267	4-929-747-01	HOLDER (BU)	
268	4-927-654-01	WASHER (LIMITER)	
269	3-659-338-00	SPRING, COMPRESSION	
270	4-929-729-01	CAM (B)	
271	4-929-727-01	CAM (A)	
272	X-4929-703-1	ARM ASSY, SWING	
911	1-535-832-12	JUMPER, FILM (WITH TERMINAL)	
912	1-634-461-11	LOADING BOARD	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

7-7. CD SECTION (2) (BU-5BD3)



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
301	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
302	4-933-126-01	INSULATOR (A)	
303	4-917-565-01	SHAFT, SLED	
304	4-917-564-01	GEAR (P), FLATNESS	
305	7-621-255-15	SCREW +P 2X3	
306	4-917-567-01	GEAR (M)	
913	* A-4617-371-A	BD BOARD, COMPLETE	
914	⚠ 8-848-144-11	DEVICE, OPTICAL KSS-240A	
915	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

BD

SECTION 8 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
uF: μ F

- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- COILS
uH: μ H
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- G : Germany model
- IT : Italian model
- EA : Saudi Arabia model
- AUS: Australian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		* A-4617-371-A BD BOARD, COMPLETE *****				< CONNECTOR >	
		< CAPACITOR >				< IC >	
C101	1-163-038-00	CERAMIC CHIP 0.1uF	25V	CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
C102	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	CN102	1-568-795-11	SOCKET, CONNECTOR 12P	
C103	1-126-094-11	ELECT 4.7uF	20% 16V				
C104	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC101	8-752-037-33	IC CXA1372Q	
C105	1-126-154-11	ELECT 47uF	20% 6.3V	IC102	8-759-821-94	IC LA6532M	
						< JUMPER RESISTOR >	
C106	1-126-154-11	ELECT 47uF	20% 6.3V	J101	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C107	1-126-154-11	ELECT 47uF	20% 6.3V	J102	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C108	1-163-038-00	CERAMIC CHIP 0.1uF	25V			< TRANSISTOR >	
C109	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C110	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	Q101	8-729-901-01	TRANSISTOR DTC144EK	
						< RESISTOR >	
C111	1-131-367-00	TANTALUM 22uF	20% 16V	R101	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
C112	1-164-232-11	CERAMIC CHIP 0.01uF	10% 50V	R102	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
C113	1-164-232-11	CERAMIC CHIP 0.01uF	10% 50V	R103	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
C114	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 50V	R104	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
C115	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 50V	R105	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
				R106	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C116	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 50V	R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
C117	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R108	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
C118	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R109	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C119	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 50V	R110	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
C120	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	R111	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
				R112	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	R113	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
C152	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R114	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
C153	1-163-006-11	CERAMIC CHIP 560PF	10% 50V	R152	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C154	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 50V	R153	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
C155	1-163-023-00	CERAMIC CHIP 0.015uF	10% 50V				
C171	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C172	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C173	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C174	1-163-038-00	CERAMIC CHIP 0.1uF	25V				

BD

DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R154	1-216-085-00	METAL GLAZE 33K 5% 1/10W		C506	1-162-294-31	CERAMIC 0.001uF 10% 50V	
R155	1-216-093-00	METAL GLAZE 68K 5% 1/10W		C507	1-161-494-00	CERAMIC 0.022uF 25V	
R156	1-216-081-00	METAL GLAZE 22K 5% 1/10W		C508	1-161-327-00	CERAMIC 0.0033uF 30% 16V	
R157	1-216-079-00	METAL GLAZE 18K 5% 1/10W		C509	1-164-159-11	CERAMIC 0.1uF 50V	
R158	1-216-079-00	METAL GLAZE 18K 5% 1/10W		C510	1-162-306-11	CERAMIC 0.01uF 20% 16V	
R159	1-216-079-00	METAL GLAZE 18K 5% 1/10W		C511	1-124-464-11	ELECT 0.22uF 20% 50V	
R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C512	1-161-494-00	CERAMIC 0.022uF 25V	
R171	1-216-001-00	METAL GLAZE 10 5% 1/10W		C513	1-126-160-11	ELECT 1uF 20% 50V	
R172	1-216-001-00	METAL GLAZE 10 5% 1/10W		C514	1-136-163-00	FILM 0.068uF 5% 50V	
R173	1-216-001-00	METAL GLAZE 10 5% 1/10W		C515	1-136-163-00	FILM 0.068uF 5% 50V	
R174	1-216-001-00	METAL GLAZE 10 5% 1/10W					
< VARIABLE RESISTOR >				C521	1-162-286-31	CERAMIC 220PF 10% 50V (H70, H77, H1400)	
				C522	1-162-286-31	CERAMIC 220PF 10% 50V (H70, H77, H1400)	
				C523	1-162-286-31	CERAMIC 220PF 10% 50V (H70, H77, H1400)	
RV101	1-238-016-11	RES. ADJ. CARBON 10K		C524	1-162-286-31	CERAMIC 220PF 10% 50V (H70, H77, H1400)	
RV102	1-238-016-11	RES. ADJ. CARBON 10K		C525	1-162-286-31	CERAMIC 220PF 10% 50V (H70, H77, H1400)	
< SWITCH >				C539	1-162-282-31	CERAMIC 100PF 10% 50V	
				C540	1-162-282-31	CERAMIC 100PF 10% 50V	
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)		C541	1-162-282-31	CERAMIC 100PF 10% 50V	
				C542	1-162-294-31	CERAMIC 0.001uF 10% 50V	
*****				C543	1-162-294-31	CERAMIC 0.001uF 10% 50V	
				C544	1-162-294-31	CERAMIC 0.001uF 10% 50V	
* A-4341-540-A	DISPLAY BOARD, COMPLETE (H66:AEP, H1200)			C545	1-162-294-31	CERAMIC 0.001uF 10% 50V	
* A-4341-541-A	DISPLAY BOARD, COMPLETE (H66:G)			C546	1-164-159-11	CERAMIC 0.1uF 50V	
* A-4341-543-A	DISPLAY BOARD, COMPLETE (H66:IT)			C547	1-162-294-31	CERAMIC 0.001uF 10% 50V	
* A-4341-545-A	DISPLAY BOARD, COMPLETE (H70)			C548	1-164-159-11	CERAMIC 0.1uF 50V	
* A-4341-546-A	DISPLAY BOARD, COMPLETE (H77:AEP, H1400)						
* A-4341-548-A	DISPLAY BOARD, COMPLETE (H77:IT)			C549	1-164-159-11	CERAMIC 0.1uF 50V	
* A-4341-549-A	DISPLAY BOARD, COMPLETE (H77:G)			C552	1-162-294-31	CERAMIC 0.001uF 10% 50V	
* 1-634-474-11	TRANSFORMER BOARD			C554	1-162-289-31	CERAMIC 390PF 10% 50V	
* 1-634-475-11	JUMPER BOARD			C555	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
* 1-634-476-11	VR BOARD			C556	1-162-294-31	CERAMIC 0.001uF 10% 50V	
* 1-634-477-11	SW BOARD						
*****				C557	1-161-494-00	CERAMIC 0.022uF 25V	
* 1-533-213-31	HOLDER, FUSE			C558	1-161-327-00	CERAMIC 0.0033uF 30% 16V	
* 1-533-213-31	HOLDER, FUSE (H70)			C559	1-164-159-11	CERAMIC 0.1uF 50V	
* 4-932-810-11	CUSHION (FL)			C560	1-162-306-11	CERAMIC 0.01uF 20% 16V	
				C561	1-124-464-11	ELECT 0.22uF 20% 50V	
< CAPACITOR >				C562	1-161-494-00	CERAMIC 0.022uF 25V	
C410	1-126-157-11	ELECT 10uF 20% 16V		C563	1-126-160-11	ELECT 1uF 20% 50V	
C416	1-124-463-00	ELECT 0.1uF 20% 50V		C564	1-136-163-00	FILM 0.068uF 5% 50V	
C417	1-126-157-11	ELECT 10uF 20% 16V		C565	1-136-163-00	FILM 0.068uF 5% 50V	
C418	1-126-157-11	ELECT 10uF 20% 16V		C566	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C419	1-126-157-11	ELECT 10uF 20% 16V		C569	1-126-160-11	ELECT 1uF 20% 50V	
C420	1-126-157-11	ELECT 10uF 20% 16V		C570	1-164-159-11	CERAMIC 0.1uF 50V	
C421	1-126-157-11	ELECT 10uF 20% 16V		C571	1-126-157-11	ELECT 10uF 20% 16V	
C422	1-126-157-11	ELECT 10uF 20% 16V		C572	1-126-157-11	ELECT 10uF 20% 16V	
				C573	1-126-163-11	ELECT 4.7uF 20% 50V	
C423	1-164-159-11	CERAMIC 0.1uF 50V		C574	1-126-157-11	ELECT 10uF 20% 16V (H70, H77, H1400)	
C460	1-126-157-11	ELECT 10uF 20% 16V		C575	1-161-374-11	CERAMIC 0.0015uF 20% 50V (H70, H77, H1400)	
C502	1-162-294-31	CERAMIC 0.001uF 10% 50V		C576	1-126-153-11	ELECT 22uF 20% 6.3V (H70, H77, H1400)	
C504	1-162-289-31	CERAMIC 390PF 10% 50V		C578	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)	
C505	1-161-329-00	CERAMIC 0.0068uF 30% 16V					

DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C579	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)		CN501	* 1-569-156-11	SOCKET, CONNECTOR 10P	
C580	1-124-465-00	ELECT 0.47uF 20% 50V (H70, H77, H1400)		CN502	* 1-569-156-11	SOCKET, CONNECTOR 10P	
C581	1-164-159-11	CERAMIC 0.1uF 50V (H70, H77, H1400)		CN503	* 1-509-931-11	SOCKET, CONNECTOR	
C582	1-164-159-11	CERAMIC 0.1uF 50V (H70, H77, H1400)		CN901	△ 1-526-930-11	INLET, AC (∼AC IN) (E)	
C583	1-161-494-00	CERAMIC 0.022uF 25V (H70, H77, H1400)		CN901	△ 1-526-931-11	INLET, AC (∼AC IN) (EXCEPT E)	
C584	1-161-494-00	CERAMIC 0.022uF 25V (H70, H77, H1400)		CN902	* 1-568-858-11	SOCKET, CONNECTOR 15P	
C585	1-161-377-00	CERAMIC 0.0047uF 30% 16V (H70, H77, H1400)		CN903	* 1-565-484-11	CONNECTOR, BOARD TO BOARD 8P	
C586	1-161-374-11	CERAMIC 0.0015uF 20% 50V (H70, H77, H1400)		< COMPOSITION CIRCUIT BLOCK >			
C587	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)		CP502	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	
C588	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)				(H70, H77, H1400)	
C589	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)		CP503	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	
C590	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)		CP504	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK (220PX13)	
C591	1-124-257-00	ELECT 2.2uF 20% 50V (H70, H77, H1400)		< DIODE >			
C592	1-162-197-31	CERAMIC 6.8PF 10% 50V		D206	8-719-984-16	LED GL-1HY112-CD (STOP)	
C593	1-162-197-31	CERAMIC 6.8PF 10% 50V		D207	8-719-984-17	LED GL-1EG112-CD (PLAY)	
C594	1-102-947-00	CERAMIC 10PF 5% 50V		D301	8-719-984-17	LED GL-1EG112-CD (A>)	
C595	1-102-947-00	CERAMIC 10PF 5% 50V		D302	8-719-984-17	LED GL-1EG112-CD (A<)	
C597	1-126-163-11	ELECT 4.7uF 20% 50V		D303	8-719-984-17	LED GL-1EG112-CD (B>)	
C599	1-136-173-00	FILM 0.47uF 5% 50V (H70, H77, H1400)		D304	8-719-984-17	LED GL-1EG112-CD (B<)	
C901	1-164-159-11	CERAMIC 0.1uF 50V		D305	8-719-984-17	LED GL-1EG112-CD (AMS/BLK)	
C902	1-164-159-11	CERAMIC 0.1uF 50V		D306	8-719-984-15	LED GL-1HD112-DE (TAPE/HIGH)	
C903	1-126-160-11	ELECT 1uF 20% 50V		D307	8-719-984-15	LED GL-1HD112-DE (CD)	
C905	△ 1-126-233-11	ELECT 22uF 20% 50V		D308	8-719-984-15	LED GL-1HD112-DE (O)	
C906	△ 1-124-556-11	ELECT 2200uF 20% 16V		D309	8-719-984-16	LED GL-1HY112-CD (STOP)	
C907	1-124-572-11	ELECT 100uF 20% 63V		D406	8-719-912-20	DIODE 1SS120	
C909	1-126-163-11	ELECT 4.7uF 20% 50V		D521	8-719-313-38	LED SEL1210RM-LC05-CD (STANDBY)	
C911	1-126-163-11	ELECT 4.7uF 20% 50V		D522	8-719-313-39	LED SEL1910DM-LC05-CD (DBFB)	
C912	1-126-157-11	ELECT 10uF 20% 16V		D523	8-719-313-39	LED SEL1910DM-LC05-CD (S-SUR)	
C913	△ 1-126-163-11	ELECT 4.7uF 20% 50V		D574	8-719-912-20	DIODE 1SS120	
C915	1-126-163-11	ELECT 4.7uF 20% 50V		D576	8-719-912-20	DIODE 1SS120	
C916	1-126-163-11	ELECT 4.7uF 20% 50V		D577	8-719-912-20	DIODE 1SS120	
C917	1-126-163-11	ELECT 4.7uF 20% 50V		D578	8-719-912-20	DIODE 1SS120	
C920	1-164-159-11	CERAMIC 0.1uF 50V		D579	8-719-912-20	DIODE 1SS120	
C921	1-164-159-11	CERAMIC 0.1uF 50V		D580	8-719-912-20	DIODE 1SS120	
C922	△ 1-126-163-11	ELECT 4.7uF 20% 50V		D581	8-719-912-20	DIODE 1SS120	
C9001	1-161-379-00	CERAMIC 0.01uF 30% 16V (G, IT)		D582	8-719-912-20	DIODE 1SS120	
C9002	1-164-159-11	CERAMIC 0.1uF 50V (G, IT)		D583	8-719-912-20	DIODE 1SS120	
C9003	1-164-159-11	CERAMIC 0.1uF 50V (G, IT)		D585	8-719-912-20	DIODE 1SS120 (H70)	
C9004	1-162-294-31	CERAMIC 0.001uF 10% 50V (G, IT)		D588	8-719-912-20	DIODE 1SS120 (EXCEPT IT)	
C9005	1-162-294-31	CERAMIC 0.001uF 10% 50V (G, IT)		D589	8-719-912-20	DIODE 1SS120 (IT)	
C9006	1-164-159-11	CERAMIC 0.1uF 50V (G, IT)		D590	8-719-912-20	DIODE 1SS120 (H70)	
< CONNECTOR >				D591	8-719-912-20	DIODE 1SS120 (H70, H77, H1400)	
CN203	* 1-569-156-11	SOCKET, CONNECTOR 10P		D592	8-719-912-20	DIODE 1SS120 (H70, H77, H1400)	
CN301	1-569-225-11	SOCKET, CONNECTOR 14P					
CN401B	* 1-569-418-11	PIN, CONNECTOR 13P					
CN402	* 1-568-856-11	SOCKET, CONNECTOR 13P					
CN403	* 1-568-827-11	SOCKET, CONNECTOR 8P					
CN404	* 1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P					

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D593	8-719-912-20	DIODE 1SS120 (H70, H77, H1400)		Q456	8-729-904-39	TRANSISTOR DTC114TS	
D594	8-719-912-20	DIODE 1SS120 (H70, H77, H1400)		Q457	8-729-904-39	TRANSISTOR DTC114TS	
D595	8-719-912-20	DIODE 1SS120 (H70, H77, H1400)		Q501	8-729-904-39	TRANSISTOR DTC114TS	
D598	8-719-001-21	DIODE UZL-9H1		Q551	8-729-904-39	TRANSISTOR DTC114TS	
D901	△ 8-719-912-20	DIODE 1SS120		Q571	8-729-900-61	TRANSISTOR DTA114ES	
D902	△ 8-719-912-20	DIODE 1SS120		Q572	8-729-900-61	TRANSISTOR DTA114ES	
D903	△ 8-719-200-82	DIODE 11ES2		Q573	8-729-224-61	TRANSISTOR 2SK246-Y	
D904	△ 8-719-200-82	DIODE 11ES2		Q574	8-729-900-80	TRANSISTOR DTC114ES	
D907	8-719-200-82	DIODE 11ES2		Q575	8-729-900-80	TRANSISTOR DTC114ES	
D908	8-719-200-82	DIODE 11ES2		Q576	8-729-620-05	TRANSISTOR 2SC2603-EF	
D909	8-719-312-09	DIODE RBA-402		Q901	8-729-620-05	TRANSISTOR 2SC2603-EF	
D910	8-719-002-33	DIODE UZL-24L		Q903	8-729-924-90	TRANSISTOR 2SB1370-EF	
D911	8-719-014-64	DIODE UZP-5.18C		Q904	8-729-924-90	TRANSISTOR 2SB1370-EF	
D912	8-719-933-36	DIODE HZS6B1L		Q905	8-729-920-98	TRANSISTOR 2SD1761-EF	
		< INDUCTOR >		Q906	8-729-920-98	TRANSISTOR 2SD1761-EF	
FB901△ *	1-410-858-11	INDUCTOR (G. IT)		Q907	8-729-900-80	TRANSISTOR DTC114ES	
FB902△ *	1-410-858-11	INDUCTOR (G. IT)		Q908	8-729-900-80	TRANSISTOR DTC114ES	
FB903△ *	1-410-858-11	INDUCTOR (G. IT)				< RESISTOR >	
		< FLUORESCENT INDICATOR >		R221	1-249-409-11	CARBON 220 5% 1/4W	
FLT501	1-519-577-11	INDICATOR TUBE, FLUORESCENT		R222	1-249-409-11	CARBON 220 5% 1/4W	
FLT502	1-519-578-11	INDICATOR TUBE, FLUORESCENT (H70, H77, H1400)		R223	1-249-437-11	CARBON 47K 5% 1/4W	
		< IC >		R224	1-249-437-11	CARBON 47K 5% 1/4W	
IC406	8-759-820-62	IC LB1639		R225	1-249-437-11	CARBON 47K 5% 1/4W	
IC501	8-759-630-99	IC M5226FP		R226	1-249-437-11	CARBON 47K 5% 1/4W	
IC502	8-759-634-50	IC M5218AL		R301	1-249-407-11	CARBON 150 5% 1/4W	
IC503	8-759-634-50	IC M5218AL (H70, H77, H1400)		R302	1-249-411-11	CARBON 330 5% 1/4W	
IC504	8-759-820-07	IC LC7566 (H70, H77, H1400)		R303	1-249-407-11	CARBON 150 5% 1/4W	
IC505	8-759-153-84	IC uPD75212ACW-273		R304	1-249-411-11	CARBON 330 5% 1/4W	
IC506	8-749-922-36	IC GP1U50XB		R305	1-249-411-11	CARBON 330 5% 1/4W	
IC551	8-759-630-99	IC M5226FP		R306	1-249-412-11	CARBON 390 5% 1/4W	
IC901	8-759-602-66	IC M5230L-A		R307	1-249-416-11	CARBON 820 5% 1/4W	
		< IC LINK >		R308	1-249-412-11	CARBON 390 5% 1/4W	
ICP999△	1-532-783-21	LINK, IC (5A) (H70)		R309	1-249-411-11	CARBON 330 5% 1/4W	
ICP999△	1-532-846-21	LINK, IC PRF5000 (5A) (EXCEPT H70)		R310	1-247-832-11	CARBON 1.1K 5% 1/4W	
		< TRANSISTOR >		R311	1-249-417-11	CARBON 1K 5% 1/4W	
Q351	8-729-900-61	TRANSISTOR DTA114ES		R312	1-249-420-11	CARBON 1.8K 5% 1/4W	
Q352	8-729-900-61	TRANSISTOR DTA114ES		R313	1-249-424-11	CARBON 3.9K 5% 1/4W	
Q353	8-729-900-61	TRANSISTOR DTA114ES		R314	1-249-407-11	CARBON 150 5% 1/4W	
Q354	8-729-900-61	TRANSISTOR DTA114ES		R315	1-249-409-11	CARBON 220 5% 1/4W	
Q406	8-729-904-39	TRANSISTOR DTC114TS		R316	1-249-411-11	CARBON 330 5% 1/4W	
Q407	8-729-904-39	TRANSISTOR DTC114TS		R317	1-247-832-11	CARBON 1.1K 5% 1/4W	
				R318	1-249-417-11	CARBON 1K 5% 1/4W	
				R319	1-249-430-11	CARBON 12K 5% 1/4W	
				R320	1-249-426-11	CARBON 5.6K 5% 1/4W	
				R416	1-249-405-11	CARBON 100 5% 1/4W	
				R417	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R418	1-249-429-11	CARBON 10K 5% 1/4W	
				R419	1-249-417-11	CARBON 1K 5% 1/4W	

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DISPLAY, TRANSFORMER, JUMPER, VR, SW

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R426	1-249-417-11	CARBON	1K	5%	1/4W	R556	1-249-434-11	CARBON	27K	5%	1/4W
R427	1-249-441-11	CARBON	100K	5%	1/4W	R557	1-247-903-00	CARBON	1M	5%	1/4W
R428	1-247-903-00	CARBON	1M	5%	1/4W	R559	1-249-429-11	CARBON	10K	5%	1/4W
R429	1-249-417-11	CARBON	1K	5%	1/4W	R564	1-247-887-00	CARBON	220K	5%	1/4W
R430	1-249-425-11	CARBON	4.7K	5%	1/4W	R568	1-249-441-11	CARBON	100K	5%	1/4W
R431	1-249-425-11	CARBON	4.7K	5%	1/4W	R569	1-249-429-11	CARBON	10K	5%	1/4W
R432	1-249-429-11	CARBON	10K	5%	1/4W	R570	1-249-417-11	CARBON	1K	5%	1/4W
R457	1-249-429-11	CARBON	10K	5%	1/4W	R571	1-249-441-11	CARBON	100K	5%	1/4W
R466	1-249-405-11	CARBON	100	5%	1/4W	R572	1-247-891-00	CARBON	330K	5%	1/4W
R467	1-249-425-11	CARBON	4.7K	5%	1/4W	R573	1-249-425-11	CARBON	4.7K	5%	1/4W
R468	1-249-429-11	CARBON	10K	5%	1/4W	R574	1-249-441-11	CARBON	100K	5%	1/4W
R469	1-249-417-11	CARBON	1K	5%	1/4W	R576	1-249-395-11	CARBON	15	5%	1/4W (H70, H77, H1400)
R486	1-249-413-11	CARBON	470	5%	1/4W	R577	1-249-405-11	CARBON	100	5%	1/4W
R487	1-249-429-11	CARBON	10K	5%	1/4W	R578	1-247-903-00	CARBON	1M	5%	1/4W (H70, H77, H1400)
R500	1-249-414-11	CARBON	560	5%	1/4W	R579	1-249-432-11	CARBON	18K	5%	1/4W (H70, H77, H1400)
R501	1-247-903-00	CARBON	1M	5%	1/4W	R580	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R502	1-249-425-11	CARBON	4.7K	5%	1/4W	R581	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R503	1-249-441-11	CARBON	100K	5%	1/4W	R582	1-249-417-11	CARBON	1K	5%	1/4W (H70, H77, H1400)
R504	1-247-903-00	CARBON	1M	5%	1/4W	R583	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R505	1-249-419-11	CARBON	1.5K	5%	1/4W	R584	1-249-417-11	CARBON	1K	5%	1/4W (H70, H77, H1400)
R506	1-249-434-11	CARBON	27K	5%	1/4W	R585	1-249-429-11	CARBON	10K	5%	1/4W (H70, H77, H1400)
R507	1-247-903-00	CARBON	1M	5%	1/4W	R586	1-249-429-11	CARBON	10K	5%	1/4W (H70, H77, H1400)
R522	1-249-409-11	CARBON	220	5%	1/4W	R587	1-249-429-11	CARBON	10K	5%	1/4W (H70, H77, H1400)
R523	1-249-409-11	CARBON	220	5%	1/4W	R588	1-249-429-11	CARBON	10K	5%	1/4W (H70, H77, H1400)
R524	1-249-439-11	CARBON	68K	5%	1/4W	R589	1-249-417-11	CARBON	1K	5%	1/4W (H70, H77, H1400)
R525	1-249-417-11	CARBON	1K	5%	1/4W	R590	1-249-417-11	CARBON	1K	5%	1/4W (H70, H77, H1400)
R526	1-249-405-11	CARBON	100	5%	1/4W	R591	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R527	1-249-405-11	CARBON	100	5%	1/4W	R592	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R528	1-249-405-11	CARBON	100	5%	1/4W	R593	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R529	1-249-405-11	CARBON	100	5%	1/4W	R594	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)
R530	1-249-405-11	CARBON	100	5%	1/4W	R595	1-249-437-11	CARBON	47K	5%	1/4W (H70, H77, H1400)
R531	1-249-405-11	CARBON	100	5%	1/4W	R596	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-249-405-11	CARBON	100	5%	1/4W	R597	1-249-417-11	CARBON	1K	5%	1/4W (H70, H77, H1400)
R533	1-249-405-11	CARBON	100	5%	1/4W	R598	1-249-411-11	CARBON	330	5%	1/4W
R534	1-249-405-11	CARBON	100	5%	1/4W	R901	1-249-419-11	CARBON	1.5K	5%	1/4W
R535	1-249-405-11	CARBON	100	5%	1/4W	R902	1-249-429-11	CARBON	10K	5%	1/4W
R536	1-249-405-11	CARBON	100	5%	1/4W	R903	1-249-421-11	CARBON	2.2K	5%	1/4W
R537	1-249-429-11	CARBON	10K	5%	1/4W	R904	1-249-433-11	CARBON	22K	5%	1/4W
R538	1-249-405-11	CARBON	100	5%	1/4W	R905	△ 1-212-934-00	FUSIBLE	1	5%	1/2W F
R539	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)	R906	△ 1-212-934-00	FUSIBLE	1	5%	1/2W F
R540	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)	R907	△ 1-212-934-00	FUSIBLE	1	5%	1/2W F
R541	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)	R908	1-249-425-11	CARBON	4.7K	5%	1/4W
R542	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)	R909	1-249-433-11	CARBON	22K	5%	1/4W
R543	1-249-441-11	CARBON	100K	5%	1/4W (H70, H77, H1400)	R910	1-247-903-00	CARBON	1M	5%	1/4W
R551	1-247-903-00	CARBON	1M	5%	1/4W	R911	1-249-405-11	CARBON	100	5%	1/4W
R552	1-249-425-11	CARBON	4.7K	5%	1/4W	R912	1-249-432-11	CARBON	18K	5%	1/4W
R553	1-249-441-11	CARBON	100K	5%	1/4W	R913	1-249-432-11	CARBON	18K	5%	1/4W
R554	1-247-903-00	CARBON	1M	5%	1/4W	R914	1-247-842-11	CARBON	3K	5%	1/4W
R555	1-249-419-11	CARBON	1.5K	5%	1/4W	R915	1-249-429-11	CARBON	10K	5%	1/4W

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DISPLAY, TRANSFORMER, JUMPER, VR, SW

LEAF SW (A)

Ref. No.	Part No.	Description	Remark
R917	1-249-413-11	CARBON 470 5% 1/4W	
R2001	1-247-891-00	CARBON 330K 5% 1/4W	
< COMPOSITION CIRCUIT BLOCK >			
RB502	1-233-206-11	COMPOSITION CIRCUIT BLOCK (100KX13) (H70, H77, H1400)	
< VARIABLE RESISTOR >			
RV406	1-238-865-11	RES. VAR. CARBON (MOTOR) 100KX2 (VOLUME) (INCLUDING VOL LED)	
RV501	1-238-457-11	RES. VAR. CARBON 250K/250K (12kHz)	
RV502	1-238-457-11	RES. VAR. CARBON 250K/250K (4kHz)	
RV503	1-238-457-11	RES. VAR. CARBON 250K/250K (1kHz)	
RV504	1-238-457-11	RES. VAR. CARBON 250K/250K (400Hz)	
RV505	1-238-457-11	RES. VAR. CARBON 250K/250K (100Hz)	
< SWITCH >			
S201	1-572-184-11	SWITCH, KEYBOARD (EDIT)	
S202	1-572-184-11	SWITCH, KEYBOARD (■)	
S203	1-572-184-11	SWITCH, KEYBOARD (▷◁)	
S204	1-572-184-11	SWITCH, KEYBOARD (△OPEN/CLOSE)	
S205	1-572-184-11	SWITCH, KEYBOARD (▷◁)	
S206	1-572-184-11	SWITCH, KEYBOARD (◁◁)	
S207	1-572-184-11	SWITCH, KEYBOARD (▷▷)	
S208	1-572-184-11	SWITCH, KEYBOARD (◁◁)	
S209	1-572-184-11	SWITCH, KEYBOARD (REPEAT)	
S210	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)	
S211	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)	
S212	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)	
S214	1-572-184-11	SWITCH, KEYBOARD (TIME)	
S301	1-572-184-11	SWITCH, KEYBOARD (■) (DECK A)	
S302	1-572-184-11	SWITCH, KEYBOARD (◁◁) (DECK A)	
S303	1-572-184-11	SWITCH, KEYBOARD (◁) (DECK A)	
S304	1-572-184-11	SWITCH, KEYBOARD (▷) (DECK A)	
S305	1-572-184-11	SWITCH, KEYBOARD (▷▷) (DECK A)	
S306	1-572-184-11	SWITCH, KEYBOARD (■) (DECK B)	
S307	1-572-184-11	SWITCH, KEYBOARD (◁◁) (DECK B)	
S308	1-572-184-11	SWITCH, KEYBOARD (◁) (DECK B)	
S309	1-572-184-11	SWITCH, KEYBOARD (▷) (DECK B)	
S310	1-572-184-11	SWITCH, KEYBOARD (▷▷) (DECK B)	
S311	1-572-184-11	SWITCH, KEYBOARD (AMS/BLK SKIP)	
S312	1-572-184-11	SWITCH, KEYBOARD (TAPE DUBBING HIGH SPEED)	
S313	1-572-184-11	SWITCH, KEYBOARD (CD SYNCHRO)	
S314	1-572-184-11	SWITCH, KEYBOARD (REC)	
S315	1-572-184-11	SWITCH, KEYBOARD (PAUSE)	
S351	1-570-849-11	SWITCH, SLIDE (DOLBY NR)	
S352	1-570-837-11	SWITCH, SLIDE (DIRECTION MODE)	
S501	1-572-184-11	SWITCH, KEYBOARD (TIMER CONTROL)	

Ref. No.	Part No.	Description	Remark
S502	1-572-184-11	SWITCH, KEYBOARD (SLEEP)	
S503	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)	
S504	1-572-184-11	SWITCH, KEYBOARD (CLOCK SET)	
S505	1-572-184-11	SWITCH, KEYBOARD (CLOCK DISPLAY)	
S506	1-572-184-11	SWITCH, KEYBOARD (POWER)	
S507	1-572-184-11	SWITCH, KEYBOARD (DBFB)	
S508	1-572-184-11	SWITCH, KEYBOARD (S-SUR)	
S509	1-572-184-11	SWITCH, KEYBOARD (TAPE)	
S510	1-572-184-11	SWITCH, KEYBOARD (CD)	
S511	1-572-184-11	SWITCH, KEYBOARD (TUNER)	
S512	1-572-184-11	SWITCH, KEYBOARD (PHONO) (EXCEPT H70)	
S512	1-572-184-11	SWITCH, KEYBOARD (VIDEO/AUX) (H70)	
S513	1-572-184-11	SWITCH, KEYBOARD (BAND)	
S514	1-572-184-11	SWITCH, KEYBOARD (TUNING -)	
S515	1-572-184-11	SWITCH, KEYBOARD (TUNING +)	
S516	1-572-184-11	SWITCH, KEYBOARD (AUTO)	
S517	1-572-184-11	SWITCH, KEYBOARD (MEMORY)	
S518	1-572-184-11	SWITCH, KEYBOARD (ENTER)	
S519	1-572-184-11	SWITCH, KEYBOARD (NEXT)	
S520	1-572-184-11	SWITCH, KEYBOARD (SHIFT)	
S521	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER -)	
S522	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER +)	
S901	△ 1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (H70)	
< CRYSTAL >			
X501	1-567-821-21	VIBRATOR, CRYSTAL (4.19MHz)	
X502	1-527-997-21	VIBRATOR, CRYSTAL (32kHz)	

* 1-624-148-11 LEAF SW (A) BOARD			

< CONNECTOR >			
CNP11A	1-564-501-11	PIN, CONNECTOR 8P	
< DIODE >			
D11A	8-719-107-94	DIODE 1SS202-1	
< PHOTO SENSOR >			
Q12A	8-719-939-23	PHOTO SENSOR GP-2S09-C	
< RESISTOR >			
R14A	1-249-408-11	CARBON 180 5% 1/4W	

LEAF SW (A)

LEAF SW (B)

LOADING

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark
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< SWITCH >

S11A	1-571-281-21	SWITCH, LEAF (HALF)	
S14A	1-571-281-21	SWITCH, LEAF (CrO2)	

* 1-624-148-11 LEAF SW (B) BOARD

< CONNECTOR >

CNP11B	1-506-615-11	PIN, CONNECTOR 9P	
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< DIODE >

D11B	8-719-107-94	DIODE 1SS202-1	
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< PHOTO SENSOR >

Q12B	8-719-939-23	PHOTO SENSOR GP-2S09-C	
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< RESISTOR >

R11B	1-247-834-11	CARBON	1.3K	5%	1/4W
R12B	1-249-414-11	CARBON	560	5%	1/4W
R13B	1-247-818-11	CARBON	300	5%	1/4W
R14B	1-249-408-11	CARBON	180	5%	1/4W

< SWITCH >

S11B	1-571-281-21	SWITCH, LEAF (HALF)	
S12B	1-571-281-21	SWITCH, LEAF (REC (A))	
S13B	1-571-281-21	SWITCH, LEAF (REC (B))	
S14B	1-571-281-21	SWITCH, LEAF (CrO2)	
S15B	1-571-281-21	SWITCH, LEAF	

1-634-461-11 LOADING BOARD

< CONNECTOR >

CN291	* 1-564-498-11	PIN, CONNECTOR 5P	
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< SWITCH >

S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

* A-4345-098-A MAIN BOARD, COMPLETE (AEP, UK)
* A-4345-099-A MAIN BOARD, COMPLETE (G, IT)
* A-4345-100-A MAIN BOARD, COMPLETE (H70)
* 1-634-483-11 JACK BOARD
* 1-634-484-11 CAPACITOR BOARD
* 1-634-485-11 POWER BOARD

Ref. No.	Part No.	Description	Remark
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* 4-925-530-01 PLATE, GROUND

< CAPACITOR >

C1	1-162-195-31	CERAMIC	4.7PF	10%	50V (EXCEPT G, IT)
C2	1-123-875-11	ELECT	10uF	20%	50V
C3	1-161-379-00	CERAMIC	0.01uF	20%	25V
C4	1-162-294-31	CERAMIC	0.001uF	10%	50V
C5	1-161-379-00	CERAMIC	0.01uF	20%	25V

C6	1-164-159-11	CERAMIC	0.1uF		50V (H70)
C7	1-164-159-11	CERAMIC	0.1uF		50V
C8	1-161-379-00	CERAMIC	0.01uF	20%	25V (EXCEPT H70)
C9	1-102-120-00	CERAMIC	0.0018uF	10%	50V (EXCEPT H70)
C10	1-161-374-11	CERAMIC	0.0015uF	20%	50V (EXCEPT H70)

C22	1-102-947-00	CERAMIC	10PF	0.5PF	50V (H70)
C23	1-136-162-00	FILM	0.056uF	5%	50V (H70)
C24	1-136-161-00	FILM	0.047uF	5%	50V (H70)
C51	1-164-056-11	CERAMIC	27PF	5%	50V
C52	1-164-056-11	CERAMIC	27PF	5%	50V

C53	1-161-379-00	CERAMIC	0.01uF	20%	25V
C54	1-161-379-00	CERAMIC	0.01uF	20%	25V
C55	1-161-379-00	CERAMIC	0.01uF	20%	25V
C56	1-161-379-00	CERAMIC	0.01uF	20%	25V
C57	1-161-379-00	CERAMIC	0.01uF	20%	25V

C58	1-123-875-11	ELECT	10uF	20%	50V
C59	1-161-379-00	CERAMIC	0.01uF	20%	25V
C60	1-124-477-11	ELECT	47uF	20%	25V
C61	1-124-925-11	ELECT	2.2uF	20%	100V
C62	1-136-153-00	FILM	0.01uF	5%	50V

C63	1-124-463-00	ELECT	0.1uF	20%	50V (EXCEPT G, IT)
C64	1-124-902-00	ELECT	0.47uF	20%	50V (EXCEPT H70)
C65	1-136-157-00	FILM	0.022uF	5%	50V (EXCEPT H70)
C66	1-136-157-00	FILM	0.022uF	5%	50V (EXCEPT H70)
C81	1-161-379-00	CERAMIC	0.01uF	20%	25V

C82	1-124-472-11	ELECT	470uF	20%	10V
C83	1-161-379-00	CERAMIC	0.01uF	20%	25V
C84	1-123-875-11	ELECT	10uF	20%	50V
C85	1-161-379-00	CERAMIC	0.01uF	20%	25V
C86	1-162-282-31	CERAMIC	100PF	10%	50V

C87	1-161-379-00	CERAMIC	0.01uF	20%	25V
C88	1-123-875-11	ELECT	10uF	20%	50V
C89	1-161-379-00	CERAMIC	0.01uF	20%	25V
C90	1-124-477-11	ELECT	47uF	20%	25V

C91	1-162-294-31	CERAMIC	0.001uF	10%	50V
C92	1-162-294-31	CERAMIC	0.001uF	10%	50V
C93	1-161-375-00	CERAMIC	0.0022uF	10%	50V
C94	1-161-375-00	CERAMIC	0.0022uF	10%	50V

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark		
C95	1-124-791-11	ELECT	1uF	20%	50V
C96	1-124-791-11	ELECT	1uF	20%	50V
C97	1-124-791-11	ELECT	1uF	20%	50V
C98	1-124-791-11	ELECT	1uF	20%	50V
C99	1-136-154-00	FILM	0.012uF	5%	50V
C100	1-136-154-00	FILM	0.012uF	5%	50V
C101	1-123-875-11	ELECT	10uF	20%	50V
C102	1-161-379-00	CERAMIC	0.01uF	20%	25V
C103	1-124-463-00	ELECT	0.1uF	20%	50V
C104	1-124-791-11	ELECT	1uF	20%	50V
C105	1-124-791-11	ELECT	1uF	20%	50V
C106	1-124-791-11	ELECT	1uF	20%	50V
C107	1-162-282-31	CERAMIC	100PF	10%	50V (G, IT)
C108	1-162-211-31	CERAMIC	33PF	5%	50V (EXCEPT G, IT)
C108	1-162-291-31	CERAMIC	560PF	10%	50V (G, IT)
C109	1-161-379-00	CERAMIC	0.01uF	20%	25V
C110	1-161-379-00	CERAMIC	0.01uF	20%	25V
C111	1-124-925-11	ELECT	2.2uF	20%	100V
C112	1-161-379-00	CERAMIC	0.01uF	20%	25V
C113	1-161-379-00	CERAMIC	0.01uF	30%	16V (G, IT)
C114	1-161-379-00	CERAMIC	0.01uF	20%	25V
C116	1-161-379-00	CERAMIC	0.01uF	20%	25V
C117	1-161-379-00	CERAMIC	0.01uF	20%	25V
C199	1-161-379-00	CERAMIC	0.01uF	20%	25V
C201	1-164-159-11	CERAMIC	0.1uF		50V
C203	1-164-159-11	CERAMIC	0.1uF		50V
C211	1-136-161-00	FILM	0.047uF	5%	50V
C212	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C213	1-161-379-00	CERAMIC	0.01uF	20%	25V
C214	1-124-902-00	ELECT	0.47uF	20%	50V
C215	1-164-159-11	CERAMIC	0.1uF		50V
C221	1-162-207-31	CERAMIC	22PF	5%	50V
C222	1-162-207-31	CERAMIC	22PF	5%	50V
C223	1-124-443-00	ELECT	100uF	20%	10V
C225	1-136-165-00	FILM	0.1uF	5%	50V
C229	1-123-875-11	ELECT	10uF	20%	50V
C231	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C232	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C233	1-162-286-31	CERAMIC	220PF	10%	50V
C234	1-162-286-31	CERAMIC	220PF	10%	50V
C235	1-124-791-11	ELECT	1uF	20%	50V
C236	1-124-791-11	ELECT	1uF	20%	50V
C237	1-123-875-11	ELECT	10uF	20%	50V
C238	1-123-875-11	ELECT	10uF	20%	50V
C249	1-126-176-11	ELECT	220uF	20%	10V
C401	1-162-282-31	CERAMIC	100PF	10%	50V (EXCEPT G, IT)
C401	1-162-294-31	CERAMIC	0.001uF	10%	50V (G, IT)

Ref. No.	Part No.	Description	Remark		
C402	1-162-282-31	CERAMIC	100PF	10%	50V
C403	1-162-290-31	CERAMIC	470PF	10%	50V (EXCEPT G, IT)
C451	1-162-282-31	CERAMIC	100PF	10%	50V (EXCEPT G, IT)
C451	1-162-294-31	CERAMIC	0.001uF	10%	50V (G, IT)
C452	1-162-282-31	CERAMIC	100PF	10%	50V
C453	1-162-290-31	CERAMIC	470PF	10%	50V (EXCEPT G, IT)
C471	1-162-294-31	CERAMIC	0.001uF	10%	50V
C472	1-162-294-31	CERAMIC	0.001uF	10%	50V
C473	1-162-294-31	CERAMIC	0.001uF	10%	50V
C474	1-162-215-31	CERAMIC	47PF	5%	50V
C475	1-164-159-11	CERAMIC	0.1uF		50V
C491	1-164-159-11	CERAMIC	0.1uF		50V
C492	1-164-159-11	CERAMIC	0.1uF		50V
C493	1-164-159-11	CERAMIC	0.1uF		50V
C494	1-164-159-11	CERAMIC	0.1uF		50V
C600	1-162-294-31	CERAMIC	0.001uF	10%	50V (EXCEPT H70)
C601	1-136-161-00	FILM	0.047uF	5%	50V
C602	1-124-925-11	ELECT	2.2uF	20%	100V
C603	1-124-925-11	ELECT	2.2uF	20%	100V
C604	1-162-294-31	CERAMIC	0.001uF	10%	50V
C611	1-162-217-31	CERAMIC	56PF	5%	50V
C612	1-136-157-00	FILM	0.022uF	5%	50V
C613	1-124-925-11	ELECT	2.2uF	20%	100V
C614	1-124-925-11	ELECT	2.2uF	20%	100V
C615	1-124-443-00	ELECT	100uF	20%	10V
C622	1-164-159-11	CERAMIC	0.1uF		50V
C651	1-136-161-00	FILM	0.047uF	5%	50V
C652	1-124-925-11	ELECT	2.2uF	20%	100V
C653	1-124-925-11	ELECT	2.2uF	20%	100V
C654	1-162-294-31	CERAMIC	0.001uF	10%	50V
C656	1-161-379-00	CERAMIC	0.01uF	20%	25V
C662	1-126-153-11	ELECT	22uF	20%	6.3V
C663	1-124-925-11	ELECT	2.2uF	20%	100V
C671	1-164-159-11	CERAMIC	0.1uF		50V
C672	1-136-173-00	FILM	0.47uF	5%	50V
C673	1-161-379-00	CERAMIC	0.01uF	20%	25V
C674	1-164-159-11	CERAMIC	0.1uF		50V
C675	1-164-159-11	CERAMIC	0.1uF		50V
C677	1-164-159-11	CERAMIC	0.1uF		50V
C698	1-123-875-11	ELECT	10uF	20%	50V
C699	1-124-478-11	ELECT	100uF	20%	25V
C701	1-162-290-31	CERAMIC	470PF	10%	50V
C702	1-162-290-31	CERAMIC	470PF	10%	50V
C703	1-124-254-00	ELECT	0.68uF	20%	50V
C704	1-123-875-11	ELECT	10uF	20%	50V
C705	1-123-875-11	ELECT	10uF	20%	50V
C706	1-124-902-00	ELECT	0.47uF	20%	50V

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark
C730	1-162-282-31	CERAMIC 100PF 10% 50V (AEP, UK)	
C730	1-162-294-31	CERAMIC 0.001uF 10% 50V (G. IT)	
C731	1-162-282-31	CERAMIC 100PF 10% 50V	
C732	1-162-282-31	CERAMIC 100PF 10% 50V	
C733	1-130-474-00	MYLAR 0.0018uF 5% 50V (EXCEPT H70)	
C734	1-130-480-00	MYLAR 0.0056uF 5% 50V (EXCEPT H70)	
C735	1-123-875-11	ELECT 10uF 20% 50V (EXCEPT H70)	
C736	1-124-791-11	ELECT 1uF 20% 50V (EXCEPT H70)	
C743	1-164-159-11	CERAMIC 0.1uF 50V	
C751	1-162-290-31	CERAMIC 470PF 10% 50V	
C752	1-162-290-31	CERAMIC 470PF 10% 50V	
C753	1-124-254-00	ELECT 0.68uF 20% 50V	
C754	1-123-875-11	ELECT 10uF 20% 50V	
C755	1-123-875-11	ELECT 10uF 20% 50V	
C756	1-124-902-00	ELECT 0.47uF 20% 50V	
C780	1-162-282-31	CERAMIC 100PF 10% 50V (AEP, UK)	
C780	1-162-294-31	CERAMIC 0.001uF 10% 50V (G. IT)	
C781	1-162-282-31	CERAMIC 100PF 10% 50V	
C782	1-162-282-31	CERAMIC 100PF 10% 50V	
C783	1-130-474-00	MYLAR 0.0018uF 5% 50V (EXCEPT H70)	
C784	1-130-480-00	MYLAR 0.0056uF 5% 50V (EXCEPT H70)	
C785	1-123-875-11	ELECT 10uF 20% 50V (EXCEPT H70)	
C786	1-124-791-11	ELECT 1uF 20% 50V (EXCEPT H70)	
C791	1-123-875-11	ELECT 10uF 20% 50V	
C792	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C793	1-123-875-11	ELECT 10uF 20% 50V	
C794	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C797	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C798A	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C798B	1-130-475-00	MYLAR 0.0022uF 5% 50V (EXCEPT H70)	
C799	1-130-471-00	MYLAR 0.001uF 5% 50V (EXCEPT H70)	
C801	1-123-875-11	ELECT 10uF 20% 50V	
C802	1-162-290-31	CERAMIC 470PF 10% 50V (EXCEPT G. IT)	
C803	1-126-233-11	ELECT 22uF 20% 50V	
C804	1-164-159-11	CERAMIC 0.1uF 50V	
C805	1-164-159-11	CERAMIC 0.1uF 50V	
C809	1-162-294-31	CERAMIC 0.001uF 10% 50V (G. IT)	
C851	1-123-875-11	ELECT 10uF 20% 50V	
C852	1-162-290-31	CERAMIC 470PF 10% 50V (EXCEPT G. IT)	
C853	1-126-233-11	ELECT 22uF 20% 50V	
C854	1-164-159-11	CERAMIC 0.1uF 50V	
C855	1-164-159-11	CERAMIC 0.1uF 50V	
C859	1-162-294-31	CERAMIC 0.001uF 10% 50V (G. IT)	
C871	△ 1-124-618-11	ELECT 2200uF 20% 35V	
C872	△ 1-124-618-11	ELECT 2200uF 20% 35V	
C873	1-124-120-11	ELECT 220uF 20% 25V	

Ref. No.	Part No.	Description	Remark
C874	△ 1-124-484-11	ELECT 220uF 20% 35V	
C875	△ 1-123-875-11	ELECT 10uF 20% 50V	
C876	1-123-875-11	ELECT 10uF 20% 50V	
C877	△ 1-123-875-11	ELECT 10uF 20% 50V	
C878	△ 1-124-910-11	ELECT 47uF 20% 50V	
C879	△ 1-124-910-11	ELECT 47uF 20% 50V	
C880	1-124-910-11	ELECT 47uF 20% 50V	
C899	1-164-159-11	CERAMIC 0.1uF 50V	
C996	1-126-163-11	ELECT 4.7uF 20% 50V	
C997	1-124-791-11	ELECT 1uF 20% 50V	
C998	1-126-154-11	ELECT 47uF 20% 6.3V	
C999	1-123-875-11	ELECT 10uF 20% 50V	
C1001	1-162-282-31	CERAMIC 100PF 10% 50V (G. IT)	
C2001	1-162-379-00	CERAMIC 0.01uF 30% 16V (G. IT)	
C4001	1-162-306-11	CERAMIC 0.01uF 20% 16V (G. IT)	
C4002	1-162-306-11	CERAMIC 0.01uF 20% 16V (G. IT)	
C8001	1-161-379-00	CERAMIC 0.01uF 30% 16V (G. IT)	
C8002	1-161-294-31	CERAMIC 0.001uF 10% 50V (G. IT)	
C8003	1-164-159-11	CERAMIC 0.1uF 50V (G. IT)	
C8004	1-164-159-11	CERAMIC 0.1uF 50V (G. IT)	

< CIRCUIT BREAKER >

C8801	△ 1-532-564-00	BREAKER, CIRCUIT (2. 2A)
C8851	△ 1-532-564-00	BREAKER, CIRCUIT (2. 2A)

< FILTER >

CF1	1-567-389-11	FILTER, CERAMIC 10.7MHz
CF2	1-567-389-11	FILTER, CERAMIC 10.7MHz (G. IT)
CF81	1-567-389-11	FILTER, CERAMIC 10.7MHz

< CONNECTOR >

CN201	* 1-569-155-11	PLUG, CONNECTOR 10P
CN202	1-568-802-11	SOCKET, CONNECTOR 19P
CN253	* 1-564-339-71	PIN, CONNECTOR 5P
CN401A	* 1-568-851-11	SOCKET, CONNECTOR 8P
CN601	* 1-569-511-11	SOCKET, CONNECTOR 14P
CN701	* 1-569-155-11	PLUG, CONNECTOR 10P
CN702	* 1-569-155-11	PLUG, CONNECTOR 10P
CN703	* 1-568-832-11	SOCKET, CONNECTOR 13P
CN704	* 1-568-834-11	SOCKET, CONNECTOR 15P
CN705	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P (EXCEPT H70)
CN706	* 1-564-336-00	PIN, CONNECTOR 2P
CN801	* 1-508-694-00	PIN, CONNECTOR 8P
CN802	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P

< COMPOSITION CIRCUIT BLOCK >

CP201	* 1-233-224-11	COMPOSITION CIRCUIT BLOCK (100P×5)
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< TRIMMER >

CT21	1-141-227-00	CAP. TRIMMER (H70)
CT22	1-141-227-00	CAP. TRIMMER (H70)

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D21	8-719-902-79	DIODE KV1236Z (H70)	
D201	8-719-010-34	DIODE UZ-4. 7BSC	
D205	8-719-912-20	DIODE 1SS120	
D601	8-719-912-20	DIODE 1SS120	
D602	8-719-200-82	DIODE 11ES2	
D603	8-719-200-82	DIODE 11ES2	
D604	8-719-912-20	DIODE 1SS120	
D605	8-719-200-82	DIODE 11ES2	
D606	8-719-010-15	DIODE UZ-3. 0BS	
D701	8-719-933-48	DIODE HZS7B3L	
D702	8-719-933-48	DIODE HZS7B3L	
D703	8-719-933-36	DIODE HZS6B1L	
D741	8-719-912-20	DIODE 1SS120	
D742	8-719-912-20	DIODE 1SS120	
D743	8-719-912-20	DIODE 1SS120	
D744	8-719-912-20	DIODE 1SS120	
D745	8-719-912-20	DIODE 1SS120	
D746	8-719-912-20	DIODE 1SS120	
D801	8-719-912-20	DIODE 1SS120	
		< CONNECTOR >	
DA11A	* 1-564-342-11	PIN. CONNECTOR 8P	
DA11B	* 1-506-503-61	PIN. CONNECTOR 9P	
DR12A	* 1-564-337-00	PIN. CONNECTOR 3P	
DR12B	* 1-564-337-61	PIN. CONNECTOR 3P	
DR82A	* 1-564-339-00	PIN. CONNECTOR 5P	
DR82B	* 1-564-339-61	PIN. CONNECTOR 5P	
DR83B	* 1-564-338-61	PIN. CONNECTOR 4P	
		< INDUCTOR >	
FB801△	* 1-410-858-11	INDUCTOR (G. IT)	
FB802△	* 1-410-858-11	INDUCTOR (G. IT)	
		< FRONT END >	
FE1	1-465-007-11	FRONT END (FM) (4 GANG) (G. IT)	
FE1	1-465-283-11	FRONT END (2 GANG) (EXCEPT G. IT)	
		< ENCAPSULATED COMPONENT >	
FE2	1-236-462-11	ENCAPSULATED COMPONENT (EXCEPT H70)	
FE2	1-236-777-11	ENCAPSULATED COMPONENT (H70)	
FE3	1-236-463-11	ENCAPSULATED COMPONENT (EXCEPT H70)	
FL81	1-236-465-11	ENCAPSULATED COMPONENT (G. IT)	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC51	8-759-239-29	IC TC9217P	
IC81	8-759-821-45	IC LA1851N	
IC201	8-759-150-19	IC uPD75112CW-064	
IC202	8-752-335-15	IC CXD2500Q	
IC221	8-752-337-09	IC CXD2554P	
IC222	8-759-990-13	IC TDA1543A	
IC223	8-759-634-51	IC M5218AP	
IC253	8-759-633-65	IC M54641L	
IC401	8-759-634-50	IC M5218AL	
IC451	8-759-634-50	IC M5218AL	
IC601	8-759-152-31	IC uPD4053BC-A	
IC602	8-752-038-00	IC CXA1298AP	
IC603	8-759-634-50	IC M5218AL	
IC604	8-759-632-54	IC M50964-212SP	
IC701	8-752-034-26	IC CXA1101P	
IC702	8-759-634-50	IC M5218AL	
IC703	8-759-152-32	IC uPD4066BC-A	
IC704	8-759-634-50	IC M5218AL (EXCEPT H70)	
IC705	8-759-630-42	IC M4052BPK	
IC706	8-759-605-16	IC M51953BL	
IC801	△ 8-749-920-13	IC STK-4132MK2	
IC999	8-759-821-93	IC LA5601	
IFT81	1-404-853-11	TRANSFORMER. IF (CERAMIC FILTER)	
IFT82	1-404-807-11	TRANSFORMER. DISCRIMINATOR	
		< JACK >	
J401	1-562-837-21	JACK (MIX MIC)	
J451	1-562-837-21	JACK (HEADPHONES)	
J701	1-569-181-11	JACK, PIN 2P (VIDEO/AUX) (H70)	
J701	1-569-181-11	JACK, PIN 2P (PHONO) (EXCEPT H70)	
		< COIL >	
L1	1-408-425-00	INDUCTOR 220uH (EXCEPT H70)	
L81	1-408-399-00	INDUCTOR 1.5mH	
L83	1-410-489-11	INDUCTOR 390uH	
L1001	1-410-521-11	INDUCTOR 100uH (G. IT)	
		< FILTER >	
LPF81	1-235-164-00	FILTER, LOW PASS	
LPF82	1-235-164-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD (G. IT)	
Q3	8-729-900-80	TRANSISTOR DTC114ES	
Q4	8-729-900-61	TRANSISTOR DTA114ES	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN, JACK, CAPACITOR, POWER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q5	8-729-900-80	TRANSISTOR DTC114ES		< RESISTOR >			
Q6	8-729-900-80	TRANSISTOR DTC114ES		R1	1-249-411-11	CARBON 330 5% 1/4W	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE		R2	1-249-393-11	CARBON 10 5% 1/4W (G, IT)	
Q8	8-729-620-05	TRANSISTOR 2SC2603-EF		R2	1-249-411-11	CARBON 330 5% 1/4W (EXCEPT G, IT)	
Q9	8-729-900-80	TRANSISTOR DTC114ES		R3	1-247-891-00	CARBON 330K 5% 1/4W	
Q10	8-729-900-80	TRANSISTOR DTC114ES		R4	1-249-411-11	CARBON 330 5% 1/4W	
Q51	8-729-202-67	TRANSISTOR 2SK246-GR3		R5	1-247-891-00	CARBON 330K 5% 1/4W (G, IT)	
Q52	8-729-201-84	TRANSISTOR 2SC3112-B		R6	1-249-411-11	CARBON 330 5% 1/4W (G, IT)	
Q53	8-729-202-67	TRANSISTOR 2SK246-GR3 (EXCEPT H70)		R7	1-249-405-11	CARBON 100 5% 1/4W	
Q54	8-729-201-84	TRANSISTOR 2SC3112-B (EXCEPT H70)		R8	1-249-441-11	CARBON 100K 5% 1/4W	
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF		R9	1-249-437-11	CARBON 47K 5% 1/4W	
Q102	8-729-620-05	TRANSISTOR 2SC2603-EF		R10	1-249-421-11	CARBON 2.2K 5% 1/4W (H70)	
Q103	8-729-900-80	TRANSISTOR DTC114ES		R10	1-249-437-11	CARBON 47K 5% 1/4W (EXCEPT H70)	
Q201	8-729-620-05	TRANSISTOR 2SC2603-EF		R11	1-249-421-11	CARBON 2.2K 5% 1/4W (EXCEPT H70)	
Q231	8-729-141-26	TRANSISTOR 2SC3622A-LK		R11	1-249-429-11	CARBON 10K 5% 1/4W (H70)	
Q232	8-729-141-26	TRANSISTOR 2SC3622A-LK		R12	1-249-421-11	CARBON 2.2K 5% 1/4W (EXCEPT H70)	
Q233	8-729-900-65	TRANSISTOR DTA114ES		R12	1-249-429-11	CARBON 10K 5% 1/4W (H70)	
Q234	8-729-900-80	TRANSISTOR DTC114ES		R13	1-249-433-11	CARBON 22K 5% 1/4W (EXCEPT H70)	
Q252	8-729-900-80	TRANSISTOR DTC114ES		R14	1-249-432-11	CARBON 18K 5% 1/4W (EXCEPT H70)	
Q253	8-729-900-80	TRANSISTOR DTC114ES		R15	1-247-903-00	CARBON 1M 5% 1/4W (EXCEPT H70)	
Q601	8-729-900-61	TRANSISTOR DTA114ES		R20	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q602	8-729-900-61	TRANSISTOR DTA114ES		R21	1-249-429-11	CARBON 10K 5% 1/4W (H70)	
Q603	8-729-900-61	TRANSISTOR DTA114ES		R22	1-249-429-11	CARBON 10K 5% 1/4W (H70)	
Q604	8-729-900-61	TRANSISTOR DTA114ES		R50	1-249-441-11	CARBON 100K 5% 1/4W	
Q605	8-729-900-61	TRANSISTOR DTA114ES		R51	1-249-417-11	CARBON 1K 5% 1/4W	
Q606	8-729-900-61	TRANSISTOR DTA114ES		R52	1-249-417-11	CARBON 1K 5% 1/4W	
Q607	8-729-900-61	TRANSISTOR DTA114ES		R53	1-249-441-11	CARBON 100K 5% 1/4W	
Q608	8-729-801-84	TRANSISTOR 2SB1013-4		R54	1-249-417-11	CARBON 1K 5% 1/4W	
Q609	8-729-801-84	TRANSISTOR 2SB1013-4		R55	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q610	8-729-801-84	TRANSISTOR 2SB1013-4		R56	1-249-405-11	CARBON 100 5% 1/4W	
Q611	8-729-801-84	TRANSISTOR 2SB1013-4		R57	1-249-401-11	CARBON 47 5% 1/4W	
Q612	8-729-801-84	TRANSISTOR 2SB1013-4		R58	1-249-423-11	CARBON 3.3K 5% 1/4W	
Q613	8-729-900-80	TRANSISTOR DTC114ES		R59	1-249-414-11	CARBON 560 5% 1/4W	
Q614	8-729-900-80	TRANSISTOR DTC114ES		R60	1-249-417-11	CARBON 1K 5% 1/4W	
Q615	8-729-904-39	TRANSISTOR DTC114TS		R61	1-249-410-11	CARBON 270 5% 1/4W	
Q616	8-729-119-76	TRANSISTOR 2SA1175-HFE		R62	1-249-418-11	CARBON 1.2K 5% 1/4W	
Q617	8-729-900-80	TRANSISTOR DTC114ES		R63	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q701	8-729-904-39	TRANSISTOR DTC114TS		R64	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q741	8-729-900-89	TRANSISTOR DTC144ES		R65	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q742	8-729-900-89	TRANSISTOR DTC144ES		R66	1-249-405-11	CARBON 100 5% 1/4W (EXCEPT G, IT)	
Q751	8-729-904-39	TRANSISTOR DTC114TS		R67	1-249-423-11	CARBON 3.3K 5% 1/4W (EXCEPT H70)	
Q781	8-729-900-61	TRANSISTOR DTA114ES		R68	1-249-414-11	CARBON 560 5% 1/4W (EXCEPT H70)	
Q782	8-729-900-61	TRANSISTOR DTA114ES		R69	1-249-417-11	CARBON 1K 5% 1/4W (EXCEPT H70)	
Q791	8-729-111-29	TRANSISTOR 2SD1616A-K		R70	1-249-410-11	CARBON 270 5% 1/4W (EXCEPT H70)	
Q792	8-729-920-98	TRANSISTOR 2SD1761-EF		R71	1-249-433-11	CARBON 22K 5% 1/4W (EXCEPT H70)	
Q794	8-729-900-61	TRANSISTOR DTA114ES					
Q801	8-729-900-89	TRANSISTOR DTC144ES					
Q999	8-729-900-80	TRANSISTOR DTC114ES					

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Ref. No.	Part No.	Description	Remark		
R72	1-249-421-11	CARBON	2.2K	5%	1/4W (EXCEPT H70)
R73	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT H70)
R74	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT H70)
R76	1-249-393-11	CARBON	10	5%	1/4W
R81	1-249-433-11	CARBON	22K	5%	1/4W
R82	1-249-417-11	CARBON	1K	5%	1/4W
R83	1-249-399-11	CARBON	33	5%	1/4W
R84	1-249-429-11	CARBON	10K	5%	1/4W
R85	1-249-429-11	CARBON	10K	5%	1/4W
R86	1-249-437-11	CARBON	47K	5%	1/4W
R87	1-249-409-11	CARBON	220	5%	1/4W
R88	1-249-429-11	CARBON	10K	5%	1/4W
R89	1-249-429-11	CARBON	10K	5%	1/4W
R90	1-249-421-11	CARBON	2.2K	5%	1/4W
R91	1-249-421-11	CARBON	2.2K	5%	1/4W
R92	1-247-891-00	CARBON	330K	5%	1/4W
R93	1-247-891-00	CARBON	330K	5%	1/4W
R94	1-249-417-11	CARBON	1K	5%	1/4W
R95	1-249-417-11	CARBON	1K	5%	1/4W
R96	1-249-425-11	CARBON	4.7K	5%	1/4W
R97	1-249-425-11	CARBON	4.7K	5%	1/4W
R98	1-249-404-00	CARBON	82	5%	1/4W
R99	1-249-417-11	CARBON	1K	5%	1/4W (EXCEPT G, IT)
R99	1-249-420-11	CARBON	1.8K	5%	1/4W (G, IT)
R100	1-247-848-11	CARBON	5.1K	5%	1/4W
R102	1-249-430-11	CARBON	12K	5%	1/4W (EXCEPT G, IT)
R103	1-249-428-11	CARBON	8.2K	5%	1/4W
R104	1-249-435-11	CARBON	33K	5%	1/4W
R105	1-249-431-11	CARBON	15K	5%	1/4W
R106	1-249-417-11	CARBON	1K	5%	1/4W
R107	1-249-430-11	CARBON	12K	5%	1/4W (G, IT)
R201	1-249-441-11	CARBON	100K	5%	1/4W
R202	1-249-441-11	CARBON	100K	5%	1/4W
R203	1-249-422-11	CARBON	2.7K	5%	1/4W
R204	1-249-422-11	CARBON	2.7K	5%	1/4W
R205	1-249-437-11	CARBON	47K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R207	1-249-437-11	CARBON	47K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-437-11	CARBON	47K	5%	1/4W
R211	1-249-423-11	CARBON	3.3K	5%	1/4W
R212	1-249-423-11	CARBON	3.3K	5%	1/4W
R213	1-249-429-11	CARBON	10K	5%	1/4W
R214	1-249-437-11	CARBON	47K	5%	1/4W
R215	1-249-429-11	CARBON	10K	5%	1/4W
R216	1-249-441-11	CARBON	100K	5%	1/4W
R217	1-249-411-11	CARBON	330	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R218	1-249-411-11	CARBON	330	5%	1/4W
R219	1-249-417-11	CARBON	1K	5%	1/4W
R220	1-249-421-11	CARBON	2.2K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-425-11	CARBON	4.7K	5%	1/4W
R233	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-249-393-11	CARBON	10	5%	1/4W
R235	1-249-417-11	CARBON	1K	5%	1/4W
R236	1-249-417-11	CARBON	1K	5%	1/4W
R237	1-249-419-11	CARBON	1.5K	5%	1/4W
R238	1-249-419-11	CARBON	1.5K	5%	1/4W
R239	1-249-433-11	CARBON	22K	5%	1/4W
R241	1-249-413-11	CARBON	470	5%	1/4W
R242	1-249-417-11	CARBON	1K	5%	1/4W
R243	1-249-411-11	CARBON	330	5%	1/4W
R244	1-249-411-11	CARBON	330	5%	1/4W
R245	1-249-421-11	CARBON	2.2K	5%	1/4W
R247	1-249-433-11	CARBON	22K	5%	1/4W
R248	1-249-421-11	CARBON	2.2K	5%	1/4W
R249	1-249-429-11	CARBON	10K	5%	1/4W
R250	1-249-429-11	CARBON	10K	5%	1/4W
R286	1-249-405-11	CARBON	100	5%	1/4W
R287	1-249-405-11	CARBON	100	5%	1/4W
R288	1-249-405-11	CARBON	100	5%	1/4W
R289	1-249-405-11	CARBON	100	5%	1/4W
R290	1-249-405-11	CARBON	100	5%	1/4W
R291	1-249-413-11	CARBON	470	5%	1/4W
R292	1-249-413-11	CARBON	470	5%	1/4W
R293	1-249-413-11	CARBON	470	5%	1/4W
R294	1-249-413-11	CARBON	470	5%	1/4W
R295	1-249-413-11	CARBON	470	5%	1/4W
R296	1-249-413-11	CARBON	470	5%	1/4W
R297	1-249-413-11	CARBON	470	5%	1/4W
R298	1-249-413-11	CARBON	470	5%	1/4W
R299	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-249-417-11	CARBON	1K	5%	1/4W
R402	1-249-441-11	CARBON	100K	5%	1/4W
R403	1-249-436-11	CARBON	39K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-401-11	CARBON	47	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R451	1-249-417-11	CARBON	1K	5%	1/4W
R452	1-249-441-11	CARBON	100K	5%	1/4W
R453	1-249-436-11	CARBON	39K	5%	1/4W
R454	1-249-425-11	CARBON	4.7K	5%	1/4W
R455	1-249-401-11	CARBON	47	5%	1/4W
R456	1-249-429-11	CARBON	10K	5%	1/4W
R471	1-249-429-11	CARBON	10K	5%	1/4W
R472	1-249-411-11	CARBON	330	5%	1/4W

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Ref. No.	Part No.	Description	Remark		
R473	1-249-441-11	CARBON	100K	5%	1/4W
R474	1-249-408-11	CARBON	180	5%	1/4W
R475	1-249-441-11	CARBON	100K	5%	1/4W
R601	1-249-420-11	CARBON	1.8K	5%	1/4W
R602	1-247-887-00	CARBON	220K	5%	1/4W
R604	1-249-418-11	CARBON	1.2K	5%	1/4W
R605	1-249-441-11	CARBON	100K	5%	1/4W
R606	1-249-441-11	CARBON	100K	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-441-11	CARBON	100K	5%	1/4W
R611	1-249-441-11	CARBON	100K	5%	1/4W
R612	1-249-441-11	CARBON	100K	5%	1/4W
R613	1-249-441-11	CARBON	100K	5%	1/4W
R614	1-249-441-11	CARBON	100K	5%	1/4W
R615	1-249-441-11	CARBON	100K	5%	1/4W
R616	1-249-429-11	CARBON	10K	5%	1/4W
R617	1-249-429-11	CARBON	10K	5%	1/4W
R618	1-249-428-11	CARBON	8.2K	5%	1/4W
R619	1-249-423-11	CARBON	3.3K	5%	1/4W
R620	1-249-417-11	CARBON	1K	5%	1/4W
R621	1-249-417-11	CARBON	1K	5%	1/4W
R622	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-429-11	CARBON	10K	5%	1/4W
R624	1-249-434-11	CARBON	27K	5%	1/4W
R651	1-249-420-11	CARBON	1.8K	5%	1/4W
R652	1-247-887-00	CARBON	220K	5%	1/4W
R654	1-249-418-11	CARBON	1.2K	5%	1/4W
R655	1-249-441-11	CARBON	100K	5%	1/4W
R656	1-249-441-11	CARBON	100K	5%	1/4W
R661	1-249-425-11	CARBON	4.7K	5%	1/4W
R662	1-249-425-11	CARBON	4.7K	5%	1/4W
R663	1-249-425-11	CARBON	4.7K	5%	1/4W
R664	1-249-425-11	CARBON	4.7K	5%	1/4W
R665	1-249-437-11	CARBON	47K	5%	1/4W
R666	1-249-437-11	CARBON	47K	5%	1/4W
R667	1-249-437-11	CARBON	47K	5%	1/4W
R668	1-247-895-00	CARBON	470K	5%	1/4W
R669	1-247-895-00	CARBON	470K	5%	1/4W
R670	1-249-421-11	CARBON	2.2K	5%	1/4W
R671	1-249-421-11	CARBON	2.2K	5%	1/4W
R672	1-249-421-11	CARBON	2.2K	5%	1/4W
R673	1-249-417-11	CARBON	1K	5%	1/4W
R674	1-249-421-11	CARBON	2.2K	5%	1/4W
R675	1-249-426-11	CARBON	5.6K	5%	1/4W
R676	1-249-429-11	CARBON	10K	5%	1/4W
R677	1-249-429-11	CARBON	10K	5%	1/4W
R678	1-249-429-11	CARBON	10K	5%	1/4W
R679	1-249-429-11	CARBON	10K	5%	1/4W
R680	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R681	1-249-421-11	CARBON	2.2K	5%	1/4W
R682	1-249-421-11	CARBON	2.2K	5%	1/4W
R683	1-249-421-11	CARBON	2.2K	5%	1/4W
R684	1-249-421-11	CARBON	2.2K	5%	1/4W
R685	1-249-421-11	CARBON	2.2K	5%	1/4W
R686	1-249-405-11	CARBON	100	5%	1/4W
R687	1-249-429-11	CARBON	10K	5%	1/4W
R688	1-247-903-00	CARBON	1M	5%	1/4W
R689	1-249-429-11	CARBON	10K	5%	1/4W
R690	1-249-429-11	CARBON	10K	5%	1/4W
R699	1-249-397-11	CARBON	22	5%	1/4W
R702	1-249-431-11	CARBON	15K	5%	1/4W
R703	1-249-437-11	CARBON	47K	5%	1/4W
R704	1-249-424-11	CARBON	3.9K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-437-11	CARBON	47K	5%	1/4W
R708	1-249-437-11	CARBON	47K	5%	1/4W
R709	1-249-421-11	CARBON	2.2K	5%	1/4W
R710	1-249-421-11	CARBON	2.2K	5%	1/4W
R712	1-249-425-11	CARBON	4.7K	5%	1/4W
R713	1-249-426-11	CARBON	5.6K	5%	1/4W
R731	1-249-417-11	CARBON	1K	5%	1/4W (EXCEPT H70)
R731	1-249-425-11	CARBON	4.7K	5%	1/4W (H70)
R732	1-249-437-11	CARBON	47K	5%	1/4W
R733	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT H70)
R734	1-247-897-11	CARBON	560K	5%	1/4W (EXCEPT H70)
R735	1-249-417-11	CARBON	1K	5%	1/4W (EXCEPT H70)
R736	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT H70)
R737	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT H70)
R738	1-249-425-11	CARBON	4.7K	5%	1/4W
R740	1-249-425-11	CARBON	4.7K	5%	1/4W
R742	1-249-405-11	CARBON	100	5%	1/4W
R744	1-249-429-11	CARBON	10K	5%	1/4W
R745	1-249-429-11	CARBON	10K	5%	1/4W
R746	1-249-429-11	CARBON	10K	5%	1/4W
R747	1-249-405-11	CARBON	100	5%	1/4W
R748	1-249-405-11	CARBON	100	5%	1/4W
R752	1-249-431-11	CARBON	15K	5%	1/4W
R753	1-249-437-11	CARBON	47K	5%	1/4W
R754	1-249-424-11	CARBON	3.9K	5%	1/4W
R755	1-249-429-11	CARBON	10K	5%	1/4W
R757	1-249-437-11	CARBON	47K	5%	1/4W
R758	1-249-437-11	CARBON	47K	5%	1/4W
R759	1-249-421-11	CARBON	2.2K	5%	1/4W
R760	1-249-421-11	CARBON	2.2K	5%	1/4W
R762	1-249-425-11	CARBON	4.7K	5%	1/4W
R763	1-249-426-11	CARBON	5.6K	5%	1/4W
R771	1-249-429-11	CARBON	10K	5%	1/4W

MAIN, JACK, CAPACITOR, POWER

MD-A

Ref. No.	Part No.	Description	Remark		
R772	1-249-429-11	CARBON	10K	5%	1/4W
R773	1-247-870-11	CARBON	43K	5%	1/4W
R774	1-249-437-11	CARBON	47K	5%	1/4W
R775	1-249-437-11	CARBON	47K	5%	1/4W
R776	1-249-437-11	CARBON	47K	5%	1/4W
R781	1-249-417-11	CARBON	1K	5%	1/4W (EXCEPT H70)
R781	1-249-425-11	CARBON	4.7K	5%	1/4W (H70)
R782	1-249-437-11	CARBON	47K	5%	1/4W
R783	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT H70)
R784	1-247-897-11	CARBON	560K	5%	1/4W (EXCEPT H70)
R785	1-249-417-11	CARBON	1K	5%	1/4W (EXCEPT H70)
R786	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT H70)
R787	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT H70)
R788	1-249-425-11	CARBON	4.7K	5%	1/4W
R790	1-249-425-11	CARBON	4.7K	5%	1/4W
R791	1-249-417-11	CARBON	1K	5%	1/4W
R792	1-249-414-11	CARBON	560	5%	1/4W
R794A	1-249-411-11	CARBON	330	5%	1/4W
R794B	1-249-433-11	CARBON	22K	5%	1/4W (EXCEPT H70)
R795	1-249-435-11	CARBON	33K	5%	1/4W (EXCEPT H70)
R801	1-249-417-11	CARBON	1K	5%	1/4W
R802	1-249-438-11	CARBON	56K	5%	1/4W
R803	1-249-416-11	CARBON	820	5%	1/4W
R804	1-249-438-11	CARBON	56K	5%	1/4W
R805	1-249-389-11	CARBON	4.7	5%	1/4W
R851	1-249-417-11	CARBON	1K	5%	1/4W
R852	1-249-438-11	CARBON	56K	5%	1/4W
R853	1-249-416-11	CARBON	820	5%	1/4W
R854	1-249-438-11	CARBON	56K	5%	1/4W
R855	1-249-389-11	CARBON	4.7	5%	1/4W
R856	1-249-417-11	CARBON	1K	5%	1/4W
R871	1-249-429-11	CARBON	10K	5%	1/4W
R872	1-249-437-11	CARBON	47K	5%	1/4W
R873	1-249-429-11	CARBON	10K	5%	1/4W
R874	1-247-883-00	CARBON	150K	5%	1/4W
R875	1-249-421-11	CARBON	2.2K	5%	1/4W
R876	1-249-421-11	CARBON	2.2K	5%	1/4W
R877	△ 1-212-881-11	FUSIBLE	100	5%	1/4W F
R878	1-249-417-11	CARBON	1K	5%	1/4W
R879	1-249-417-11	CARBON	1K	5%	1/4W
R880	△ 1-212-881-11	FUSIBLE	100	5%	1/4W F
R881	1-249-421-11	CARBON	2.2K	5%	1/4W
R882	1-249-421-11	CARBON	2.2K	5%	1/4W
R883	△ 1-212-881-11	FUSIBLE	100	5%	1/4W F
R7001	1-247-883-00	CARBON	150K	5%	1/4W
R7002	1-249-429-11	CARBON	10K	5%	1/4W
R7003	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R8001	1-249-389-11	CARBON	4.7	5%	1/4W (G. 1T)
R8002	1-249-389-11	CARBON	4.7	5%	1/4W (G. 1T)
< VARIABLE RESISTOR >					
RV81	1-238-601-11	RES. ADJ. CARBON	22K		
RV82	1-238-601-11	RES. ADJ. CARBON	22K		
RV701	1-238-601-11	RES. ADJ. CARBON	22K		
RV751	1-238-601-11	RES. ADJ. CARBON	22K		
< SWITCH >					
S701	1-572-185-11	SWITCH, SLIDE (ISS)	(EXCEPT H70)		
S702	1-554-088-00	SWITCH, KEYBOARD	(SYSTEM RESET)		
< COIL >					
T1	1-402-424-11	COIL (ANT, SW3)	(H70)		
T2	1-402-346-11	COIL (OSC, SW3)	(H70)		
< TEMINAL >					
TB1	* 1-537-138-31	TERMINAL BOARD (ANTENNA)	(EXCEPT H70)		
TB1	* 1-537-238-21	TERMINAL BOARD (ANTENNA)	(H70)		
TB801	1-537-238-11	TERMINAL BOARD	(SPEAKER)		
TP81	* 1-568-449-11	HOUSING, CONNECTOR	(PC BOARD) 3P		
TP601	* 1-568-449-11	HOUSING, CONNECTOR	(PC BOARD) 3P		
TP701	* 1-568-449-11	HOUSING, CONNECTOR	(PC BOARD) 3P		
TP702	* 1-568-449-11	HOUSING, CONNECTOR	(PC BOARD) 3P		(EXCEPT H70)
< CRYSTAL >					
X51	1-577-126-11	VIBRATOR, CRYSTAL	(7.2MHz)		
X81	1-577-075-11	OSCILLATOR, CERAMIC	(456kHz)		
X201	1-577-358-21	VIBRATOR, CERAMIC	(4MHz)		
X251	1-567-908-11	VIBRATOR, CRYSTAL	(16.9344MHz)		
X601	1-577-358-21	VIBRATOR, CERAMIC	(4MHz)		

* 1-624-147-11 MD-A BOARD					

< CAPACITOR >					
C41A	1-162-289-31	CERAMIC	390PF	10%	50V
C42A	1-136-157-00	FILM	0.022uF	5%	50V
C43A	1-124-282-00	ELECT	22uF	20%	25V
C48A	1-162-217-31	CERAMIC	56PF	5%	50V
C61A	1-162-289-11	CERAMIC	390PF	10%	50V
C62A	1-136-157-00	FILM	0.022uF	5%	50V
C63A	1-124-282-00	ELECT	22uF	20%	25V
C68A	1-162-217-31	CERAMIC	56PF	5%	50V
C81A	1-126-101-11	ELECT	100uF	20%	16V
C82A	1-126-101-11	ELECT	100uF	20%	16V

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MD-A

MD-B

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
CNP12A *	1-564-337-00	PIN, CONNECTOR 3P	
CNP13A *	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CNP81A *	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CNP82A *	1-564-339-00	PIN, CONNECTOR 5P	
< IC >			
IC81A	8-759-111-44	IC uPC4570C-1	
< TRANSISTOR >			
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R17A	1-249-437-11	CARBON 47K 5% 1/4W	
R18A	1-249-437-11	CARBON 47K 5% 1/4W	
R41A	1-247-881-00	CARBON 120K 5% 1/4W	
R42A	1-249-405-11	CARBON 100 5% 1/4W	
R43A	1-247-882-11	CARBON 130K 5% 1/4W	
R44A	1-249-426-11	CARBON 5.6K 5% 1/4W	
R61A	1-247-881-00	CARBON 120K 5% 1/4W	
R62A	1-249-405-11	CARBON 100 5% 1/4W	
R63A	1-247-882-11	CARBON 130K 5% 1/4W	
R64A	1-249-426-11	CARBON 5.6K 5% 1/4W	
R81A	1-249-409-11	CARBON 220 5% 1/4W	
R82A	1-249-409-11	CARBON 220 5% 1/4W	
< VARIABLE RESISTOR >			
RV41A	1-228-989-00	RES. ADJ. CARBON 470	
RV61A	1-228-989-00	RES. ADJ. CARBON 470	

* 1-624-146-11 MD-B BOARD			

< CAPACITOR >			
C41B	1-162-289-31	CERAMIC 390PF 10% 50V	
C42B	1-136-157-00	FILM 0.022uF 5% 50V	
C43B	1-124-282-00	ELECT 22uF 20% 25V	
C44B	1-162-288-31	CERAMIC 330PF 10% 50V	
C45B	1-136-273-91	FILM 75PF 5% 630V	
C47B	1-162-209-31	CERAMIC 27PF 5% 50V	
C48B	1-162-217-31	CERAMIC 56PF 5% 50V	
C61B	1-162-289-11	CERAMIC 390PF 10% 50V	
C62B	1-136-157-00	FILM 0.022uF 5% 50V	
C63B	1-124-282-00	ELECT 22uF 20% 25V	

Ref. No.	Part No.	Description	Remark
C64B	1-162-288-31	CERAMIC 330PF 10% 50V	
C65B	1-136-273-91	FILM 75PF 5% 630V	
C67B	1-162-209-31	CERAMIC 27PF 5% 50V	
C68B	1-162-217-31	CERAMIC 56PF 5% 50V	
C81B	1-126-101-11	ELECT 100uF 20% 16V	
C82B	1-126-101-11	ELECT 100uF 20% 16V	
C83B	1-124-791-11	ELECT 1uF 20% 50V	
C84B	1-124-925-11	ELECT 2.2uF 20% 50V	
C85B	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C86B	1-130-476-00	MYLAR 0.0027uF 5% 50V	
C87B	1-130-476-00	MYLAR 0.0027uF 5% 50V	
C88B	1-136-562-11	FILM 0.0082uF 5% 630V	
C89B	1-161-494-00	CERAMIC 0.022uF 25V	
< CONNECTOR >			
CNP12B *	1-564-337-61	PIN, CONNECTOR 3P	
CNP13B *	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CNP81B *	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
CNP82B *	1-564-339-61	PIN, CONNECTOR 5P	
CNP83B *	1-564-338-61	PIN, CONNECTOR 4P	
CNP84B *	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	(EXCEPT H70)
< DIODE >			
D81B	8-719-107-94	DIODE 1SS202-1	
< IC >			
IC81B	8-759-111-41	IC uPC4570C-1	
< COIL >			
L41B	1-410-780-11	INDUCTOR 27mH	
L61B	1-410-780-11	INDUCTOR 27mH	
< TRANSISTOR >			
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q81B	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q82B	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q83B	8-729-142-46	TRANSISTOR 2SC2001-LK	
< RESISTOR >			
R17B	1-249-437-11	CARBON 47K 5% 1/4W	
R18B	1-249-437-11	CARBON 47K 5% 1/4W	
R41B	1-247-881-00	CARBON 120K 5% 1/4W	
R42B	1-249-405-11	CARBON 100 5% 1/4W	
R43B	1-247-882-11	CARBON 130K 5% 1/4W	
R44B	1-249-426-11	CARBON 5.6K 5% 1/4W	
R45B	1-249-430-11	CARBON 12K 5% 1/4W	
R61B	1-247-881-00	CARBON 120K 5% 1/4W	

MD-B

SHIELD

Ref. No.	Part No.	Description	Remark
R62B	1-249-405-11	CARBON 100 5% 1/4W	
R63B	1-247-882-11	CARBON 130K 5% 1/4W	
R64B	1-249-426-11	CARBON 5.6K 5% 1/4W	
R65B	1-249-430-11	CARBON 12K 5% 1/4W	
R81B	1-249-409-11	CARBON 220 5% 1/4W	
R82B	1-249-409-11	CARBON 220 5% 1/4W	
R83B	1-249-429-11	CARBON 10K 5% 1/4W	
R84B	△ 1-212-849-00	FUSIBLE 4.7 5% 1/4W F	
R85B	1-249-435-11	CARBON 33K 5% 1/4W	
R86B	1-249-435-11	CARBON 33K 5% 1/4W	

< VARIABLE RESISTOR >

RV41B	1-228-989-00	RES. ADJ. CARBON 470
RV42B	1-230-500-11	RES. ADJ. CARBON 220K
RV61B	1-228-989-00	RES. ADJ. CARBON 470
RV62B	1-230-500-11	RES. ADJ. CARBON 220K

< RELAY >

RY81B	1-515-614-11	RELAY
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* 1-634-870-11 SHIELD BOARD

< CAPACITOR >

C528	1-123-875-11	ELECT 10uF 20% 50V
C529	1-125-447-11	DOUBLE LAYERS 1F 5.5V

< CONNECTOR >

CN504	* 1-564-336-00	PIN, CONNECTOR 2P
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MISCELLANEOUS

911	1-535-832-12	JUMPER, FILM (WITH TERMINAL)
918	1-533-213-31	HOLDER, FUSE
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)
924	* 1-533-213-31	HOLDER, FUSE (H70)
925	* 1-562-908-11	CONNECTOR, FEMALE (NO SHIELD) (G, IT)
ANT1	1-501-270-00	ANTENNA, TELESCOPIC (H66, H70, H77)
F901	△ 1-532-078-00	FUSE (1A) (EA, H77, H1400)
F901	△ 1-532-215-00	FUSE, TIME-LAG (0.8A) (E, AUS, H66, H1200)
F902	△ 1-532-259-11	FUSE, GLASS TUBE (1.6A) (H70)
HE1	A-2003-504-A	CHASSIS ASSY, HEAD
HRP1		(PB/REC/ERASE) (DECK B)
HP1	A-2003-503-A	PC BOARD ASSY, HEAD (PB) (DECK A)

Ref. No.	Part No.	Description	Remark
M1	X-3343-447-1	MOTOR ASSY (DECK A)	
M2	X-3343-447-1	MOTOR ASSY (DECK B)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
PM1	1-454-456-11	SOLENOID, PLUNGER (DECK A)	
PM2	1-454-456-11	SOLENOID, PLUNGER (DECK B)	
T901	△ 1-450-462-11	TRANSFORMER, POWER (H77, H1400)	
T901	△ 1-450-463-11	TRANSFORMER, POWER (H66, H1200)	
T901	△ 1-450-464-11	TRANSFORMER, POWER (H70)	

ACCESSORY & PACKING MATERIAL

1-465-342-11	REMOTE COMMANDER (RM-S100) (H66, H1200)
1-465-692-11	REMOTE COMMANDER (H70, H77, H1400)
1-501-369-11	ANTENNA (UK)
1-501-369-11	ANTENNA (H1200:AEP, H1400) (MHC)
1-501-374-11	ANTENNA, LOOP (UK)
1-501-374-11	ANTENNA, LOOP (EXCEPT UK) (FH)
△ 1-569-007-11	ADAPTOR, CONVERSION 2P (E) (FH)
△ 1-569-008-11	ADAPTOR, CONVERSION 2P (EA) (FH)
△ 1-555-074-00	CORD, POWER (AUS) (FH)
△ 1-556-280-00	CORD, POWER (E) (FH)
△ 1-558-032-11	CORD, POWER (UK) (FH)
△ 1-575-131-11	CORD, POWER (H66, EA, H77, H1200:AEP, H1400) (FH)
1-575-495-11	CORD, SPEAKER (H1200, H1400) (MHC)
2-181-754-01	COVER, BATTERY
3-753-064-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (H66:AEP, H1200:AEP) (FH)
3-753-064-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (UK)
3-753-064-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (H66, H1200) (FH)
3-753-065-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (H70, H77, H1400) (FH)
3-753-065-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, PORTUGUESE, ITALIAN) (H77, H1400) (FH)
* 4-936-852-01	CUSHION (LOWER)
* 4-936-853-01	CUSHION (UPPER)
* 4-936-899-01	CUSHION
* 4-944-526-01	INDIVIDUAL, CARTON (E, EA) (FH)
* 4-944-527-01	INDIVIDUAL, CARTON (AUS) (FH)
* 4-944-528-01	INDIVIDUAL, CARTON (H77) (FH)
* 4-944-529-01	INDIVIDUAL, CARTON (H1400) (FH)
* 4-944-530-01	INDIVIDUAL, CARTON (H66) (FH)
* 4-944-531-01	INDIVIDUAL, CARTON (H1200:AEP) (FH)
* 4-944-532-01	INDIVIDUAL, CARTON (UK)

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.